PHARMACEUTICAL HISTORIAN

Vol. 33 No.1
March 2003

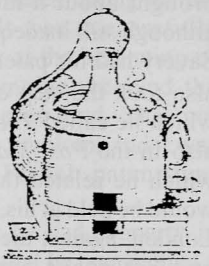
British Society for the History of Pharmacy
840 Melton Road, Thurmaston, LEICESTER LE4 8BN

Founded 1967

https://doi.org/10.24355/dbbs.084-201802141340

PHARMACEUTICAL HISTORIAN

Editor: Ainley Wade, BPharm, MPhil, FRPharmS
840 Melton Road, Thurmaston, LEICESTER LE4 8BN



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Diary

Wednesday 12 March 2003 Foundation Lecture
'Intoxicating Vapours: Opium, Cannabis and Tobacco in 19th and 20th Century Britain' by Professor Virginia Berridge at RPSGB Lambeth.

11–13 April 2003 BSHP Annual Spring Conference
To be held at Kings Manor Hotel, 100 Milton Road East, Edinburgh EH15 2NP.

Wednesday 7 May 2003
'Chemist-Opticians' by Mr Neil Handley, Curator, British Optical Association Museum at RPSGB Lambeth.

Thursday 13 November 2003
Joint Meeting with Society of Apothecaries Blackfriars Lane, London

International Society for the History of Pharmacy
The next meeting of the International Society for the History of Pharmacy will be the **36th International Congress** in Bucarest, Romania in September 24–27, 2003. Details can be obtained by filling in the form on the copy of News Letter number 3 sent to all members or from the International Society website at **www.histpharm.org**

National Association of Women Pharmacists
In a few years the NAWP will be celebrating its centenary. On that occasion NAWP hopes to publish something on the experiences of women pharmacistsin the earlier part of the 20th century. They would like to hear from older women pharmacists who can tell them any recollections of the early members of NAWP or about their own work. Please reply to Mrs Brenda Ecclestone, NAWP Secretary, c/o Office Manager, RPSGB, 1 Lambeth High Street, London SE1 7JN.

A Hive of Industry: The Apothecaries and Steam Engines

Dr J. Burnby

Strolling along Blackfriars' Lane, London, the quiet and narrow street which runs past Apothecaries Hall today, one would never think that it had once been the centre for heavy, non-pharmaceutical industry, but such was the case.

The story begins with a Devonian by the name of Thomas Savery (*c*1650–1715; FRS 1705). Tradition says that he was born in the village of Shilston near Totnes where his people had once possessed the manor. Now, in the seventeenth century, they were prosperous merchants in Totnes itself. We know little about any training Thomas may have had, but it seems probable that he had travelled in the mining districts of Cornwall and western Devon, and realised that the main problem for the miners and mine owners was the rising water as they dug deeper in search of tin and copper.

It was in 1698 that Savery obtained letters patent for an interesting device which he claimed would solve the miners' problem. He had constructed an engine which combined two sources of power, the expansive force of steam under pressure, and the weight of the earth's atmosphere. This was a new idea and received much interest in later years, but it was in fact a failure for the purpose for which it was designed. His pump, though it lifted water, had fatal limitations.

Steam from a boiler was admitted through a valve into a closed tank, cold water was then sprayed on the outside of the tank and the steam condensed. This produced a vacuum which drew water up a suction pipe, then through another non-return valve to the outflow. It was a simple process but it depended on atmospheric pressure for the initial lift which was limited to 32 feet (9.75 m), i.e. the maximum height to which a column of water can be raised by the weight of the atmosphere at sea-level.

Even allowing for the combined effect of suction plus atmospheric pressure, it was virtually impossible for the pump to raise water more than about fifty feet (15.2 m). Savery made improvements in 1701 which

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brought about a more continuous flow of water, although still inadequate. By means of a Private Bill, Savery had his patent extended until June 1733. He also took the step of publishing a booklet in 1702 which he called *The Miner's Friend*. He advertised also in the *Post Man* issued 19-21 March 1702 in which he related that demonstrations of his pump would be held at his, 'Workhouse in Salisbury Court, London, against the Old Playhouse on Wednesdays and Saturdays every week from 3 to 6 in the afternoon'.

As explained earlier he had used what is called 'low steam' so his pump could only lift about twenty feet (6.1 m) from below the receivers, and the forcing lift to about the same, so the vertical intervals in a mine would have had to be a maximum of about fifty feet. This was far too costly and also far too dangerous. It proved however useful in gardens and for fountains, as at Sion Hill. Interest in his pump continued long after his death, and long after Newcomen's pump had arrived on the scene and proved itself. One of the advantages of Savery's pump was that it required no heavy mechanical moving parts whose friction could cause inefficiency.

The War of the Spanish Succession began in 1702, which resulted in the Admiralty setting up a Commission for Sick and Wounded Seamen as well as for the exchange of prisoners-of-war. The Commission had agents both in the main seaports of this country and overseas. The Commissioners met three times a week. In 1705, the post of treasurer to the Commission fell vacant, and after closely investigating his business circumstances, Thomas Savery was offered the post at a salary of £200 a year, as well as the use of an apartment. He held this position until June 1713, when the war drawing to a close, he was no longer required. During this time he was responsible for a turnover of over £100,000 a year, and the Treasurer was legally able to use this money for his own purposes between the accountancy periods.

During this time, Thomas Newcomen had developed his pump which was not worked by steam pressure but by the pressure of the atmosphere on a piston above a vacuum created by condensing steam.

Newcomen (1663–1729) also came from Devon, from Dartmouth, although several generations earlier the family had originated in Lincolnshire. His father, Elias, a well known Baptist, traded with the *Nonsuch* to places as far away as Newfoundland. His son Thomas, however, became an ironmonger and established himself in business with a large trade in metal goods. He is known to have been trading with the ironmasters, Foleys of Worcestershire, ordering as much as 25 tons in 1698 to 1699.

His partner at Dartmouth was a John Calley who seems to have worked primarily as a plumber and glazier. It is interesting to note that Thomas Newcomen's older brother, John, was an apothecary in Chard, Somerset, and that Thomas's daughter married an apothecary and surgeon called William Wolcot of Dodbrooke, near Dartmouth, the uncle of John the satirist, better known as 'Peter Pindar'.

It seems surprising, if not unbelievable, that these two men, Thomas Savery and Thomas Newcomen, both from families of merchants and both interested in mining activities and the raising of water had not known each other, but no link has been established. Nevertheless it is likely that Savery and Newcomen met in Dartmouth at the house of Caleb Rockett, apothecary, when Savery had to go there on the Commission's affairs.

The first known Newcomen steam engine was erected in Staffordshire. We have an illustration which shows on its plate the following:

'The STEAM ENGINE near Dudley Castle. Invented by Capt. Savery, & Mr. Newcomen Erected by ye lat[t]er: 1712 delin. & sculp. by Th. Barney 1719.'

It is thought that Savery's title of 'Capt.' does not mean that he had been in the army, but rather that he had worked in the Cornish and Devon mines where the title is used to indicate the superintendent of the mine.

It had been found that Savery's patent covered ALL devices for raising water by fire, consequently they very sensibly joined forces and did not throw money away in litigation.

Until 1733, the date of the expiry of Savery's patent, and even later, all known 'fire engines' in Great Britain were either leased or operated by licence under the patent awarded in 1698. It is at this point that a John Meres, Clerk to the Society of Apothecaries, comes into the narrative, for the joint stock company which financed the first hundred or so steam engines had its headquarters at Apothecaries' Hall.

John Meres junior had succeeded to his father's position as Clerk to the Apothecaries in 1691. His grandfather had been born in the parish of St. Dionis Backchurch and it is likely that the family was of Flemish or Dutch origin, the name then being spelt Meere or Meeres.

The younger Meres was much involved in the conveyancing of the Chelsea Physic Garden to the Apothecaries' Society which was in serious arrears with its rent for the garden, so much so that they had to apply to Sir Hans Sloane who was now the ground landlord. Negotiations were protracted but in due course the deeds for handing over the Garden to the Society under certain conditions were ready for sealing in 1722.

Meres was also responsible for the drawing up of the articles for the Apothecaries' Society Navy Stock in 1702 which were clearly based on those of the Laboratory Stock.

It was on 15 May 1715 that Thomas Savery died. In his will he bequeathed all his possessions, including his patent rights, to his widow Martha. His will was drawn up by John Meres and witnessed

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by Meres, Savery's clerk and a sister-in-law. Martha Savery was named the sole executrix, and it is believed that it was then that she arranged for Meres to take over her remaining shares, particularly because she was later in receipt of an annuity in John Meres' will; she lived until 1759, long outliving Meres.

John Meres now became the central figure in all the later Savery/Newcomen transactions. It was in early 1716 that it was decided amongst the share-holders that an unincorporated joint stock company should be formed. Meres became treasurer of a

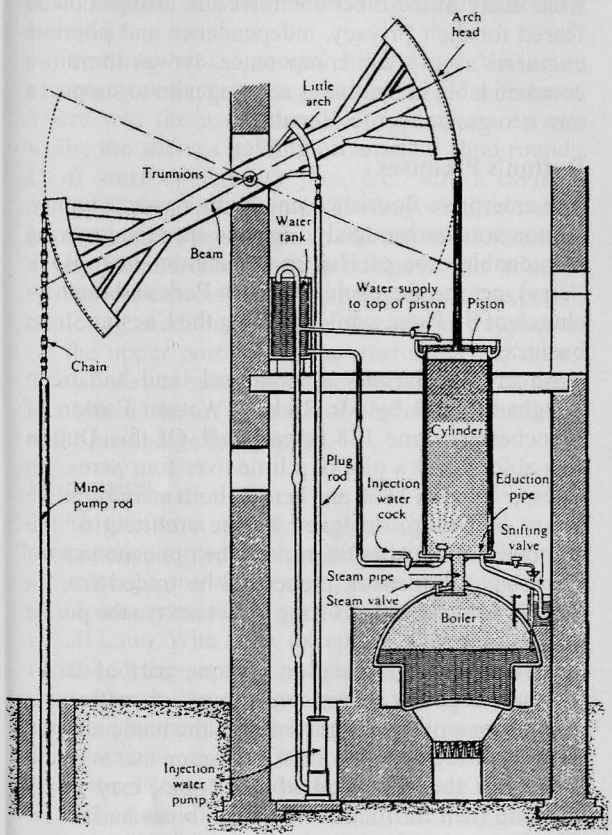

Figure. A typical Newcomen engine of about 1715 (per Barton, D.B. *The Cornish Beam Engine*. Wheaton: Exeter, 1989).

committee of five which met weekly at Apothecaries' Hall, was elected annually and known as 'The Committee appointed and authorised by the Proprietors of the Invention for Raising Water and occasioning Motion to all sorts of Mill-work by the Impellant Force of Fire', or rather more shortly as 'The Proprietors'. The signatories included Newcomen and Meres as well as four prominent men of the cities of Westminster and London.

An official agreement was made in France that the Newcomen engine should be demonstrated to the Royal Academy of Sciences and if successful it would obtain a monopoly.

Meres set off for Paris in the July of 1725 with an Englishman called John May, Meres taking all the necessary component parts. It was successfully erected on the Seine near Passy at the beginning of May 1726. Shortly after the engine received the Academy's approval, John Meres died. This not unnaturally caused considerable problems and it was not until July 1727 that the French patent was awarded.

John Meres' will shows that he had property in London, Surrey and Devon and that he bequeathed a number of annuities including the one to Savery's widow. He also passed on all his botanical books to the Apothecaries' Society as well as £200 to its lecturer in botany; his executors were a lawyer and his Deputy Clerk at the Apothecaries' Society, Cornelius Dutch.

Dutch was quickly appointed Clerk to the Society, and it would seem that not long afterwards he again followed in Meres' footsteps by becoming Treasurer of the 'Proprietors'.

It is particularly interesting to note that Cornelius' brother, William, was an apothecary in Spitalfields, London. Cornelius father, also Cornelius, was undoubtedly of Dutch extraction, and one can not but wonder if Meres had himself also been harking back to his roots.

The connection between the practising apothecaries in London and the early development of the steam engine is sometimes surprisingly close. Living in nearby Enfield, Middlesex, was a well known family, the Wilfords, who had been landowners of some note. Thomas Wilford, the son of Edward the Elder, in May 1669 was apprenticed to William Phillips of St. Dionis Backchurch parish, London, for the usual eight years. Thomas passed his examination in September 1677 and became a member of the Apothecaries' Society. He first of all practised in Seething Lane near Stocks Market, London, but later moved back to Enfield where he treated Poor Law patients and others. He made his will on 19 July 1719 and named his son Joseph, now a barber-surgeon, as executor. He bequeathed a third share of his Seething Lane house to his daughter Ann, and the same share to his son John, provided he paid Joseph twenty shillings for the remainder of the lease.

To add to the later complications on 22 and 23 November 1722 he took out a 'Lease and Release' on his property in Chase Side, Enfield, which was then a usual method of raising money. Less than two years later he died and the Middlesex Deeds Register of 1727 shows that the property had already been mortgaged to Elias Newcomen of Chard, Somerset, gentleman. The Chase Side property was also bequeathed to John, but it carefully points out that, 'it was chargeable with payment of my mortgage to my brother Charles'.

Elias was a young man who had been working on the erection of a 'fire engine' for the Proprietors at Yatestoop lead mine near Winster, Derbyshire. He too had already

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died and as a consequence such estate as he possessed had now passed to his father, John, the brother of Thomas Newcomen, inventor of the 'fire engine'.

The first half of the eighteenth century was a period of ingenuity and enterprise. It was on 18th April 1707 that Abraham Darby I (1678–1717) of Coalbrookdale, Shropshire, was granted a patent for his method of casting iron pots in dry sand, and by mid 1709 was in full production. His interests lay not in the raw pig iron but with iron being cast directly from the furnace into pots and pans. Thomas Lombe in 1717 had already built his silk throwing mill where he employed some 300 workmen. In 1733 John Kay of Bury, Lancashire, a clock-maker, made improvements to the loom; the shuttle on wheels was struck by hammers and driven through the warp, so increasing the width of the cloth which could be woven and thus taking his first step to the flying shuttle. Five years later Lewis Paul of Birmingham passed wool or cotton through two sets of rollers set at different speeds, the spindle giving the necessary twist and improving spinning.

It was Frederick Engels who gave us the term 'Industrial Revolution' in about 1844 and it was later sanctified by Arnold Toynbee, but it would seem that rather more exactly, it began earlier than around 1760, the date which is usually given.

Acknowledgements

In writing this paper, I am much indebted to Alan Smith, BSc, MIMinE, who presented this paper to the British Society for the History of Pharmacy at the University of Warwick on 12 September 1978 and gave me a copy. Later he gave me a copy of his *Engines Moved by Fire and Water,* published by The Newcomen Society in 1994-95. *The Steam Engine of Thomas Newcomen* by LTC Rolt and JS Allen has also proved most useful. I am very grateful for their help.

John Dutton and Sons, Rock Ferry

Muriel H. Tompkins

John Dutton was born in 1819 at Spurstow, Bunbury, the son of a farmer, and trained as a chemist and druggist in Nantwich. In 1846 he came to Birkenhead and acquired a shop in Chester Street near to the recently established shipyard of John Laird. In 1847 he was registered as a member of the Pharmaceutical Society of Great Britain, an indication of his policy and ambition.

The Pharmaceutical Society

The Society had been formed in 1841 with the object of uniting chemists and druggists into one body 'for the protection of general interests and the advancement of scientific knowledge.' Formal education in chemistry, materia medica, botany and pharmacy was to be undertaken, and an examination passed before admission to the Society. This became law in 1868, the Society's own school starting lectures in 1842 followed by various provincial colleges. The founder of the Society, Jacob Bell, had toured the country publishing the aims of the Society, and while 4000 of the membership were in London, there were sporadic groups elsewhere, the largest at the time of Dutton's registration being in Liverpool with 27 members. There would be scientific lectures available in Liverpool at that time and it must confidently be assumed that Dutton would attend them.

There was considerable opposition to the Society from many of the older chemists and druggists who feared for their privacy, independence and possible enquiries as to their competence. It was therefore commendable in Dutton as a young man to support a move to greater professionalism.

Dutton's Premises

The enterprise flourished and, with a young family, Dutton was encouraged to expand into the growing fashionable area of Higher Bebington (later Rock Ferry), near to the exclusive Rock Park and the new church of St. Peter, while retaining the Chester Street business.

An area of largely agricultural land had been bought in 1834 by Mr Richard Watson Barton of Manchester, some 188 acres in all. Of this Dutton was able to buy a plot of a little over four acres[1] on Chester Road in 1860 and here he built an impressive house and shop, designed by the architect of the doctor's house, Abbotsford,[2] on the opposite side of the road. While work proceeded he traded from a neighbouring house at 3 King Street next to the police station.

When Higher Bebington became part of Birkenhead the police station was turned into offices. It bore a stone plaque engraved with the name and the Bebington crest, a star. This Bebington star was the device on the masthead of the Rock Ferry boats showing their destination. Eastham boats had a fox, Woodside's a 'W', Monks Ferry a little locomotive and Birkenhead's a bell.

Figure 1. 560 New Chester Road
The building is unusual in that the frontage on New Chester Road presents a purely domestic appearance.

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It has a clean uncluttered line deriving from the Georgian tradition, in good quality brick, with quoins and pediments of Storeton stone, and has withstood the test of time better than its more elaborately decorated neighbours of later date. Figure 1 shows 560 New Chester Road while the shop entrance at the side is 2 King Street and two further shops, Nos 4 and 6, are included in the block. There are outbuildings – stables and a 'bottling shed' for the wine shop at No. 6 and a surprisingly prolific garden. A further terrace of houses in King Street and Acton Road completed Dutton's use of his four acres at a later date.

The shop was a model high class Victorian pharmacy with mahogany and plate glass fixtures. There was the usual run of drug-drawers on two walls, the shelves holding ornamental shop rounds, Delft ware apothecary jars, etc., and a lavishly equipped dispensary bench. The bay window was an innovation in shop design, an indication of increasing enterprise and confidence in business. The window casing was especially fine with engraved glass panels depicting medicinal herbs and chemical apparatus on the upper portions of the mirror-backed doors. The whole was surmounted by three splendid carboys, symbols of the art and craft of pharmacy, containing red, blue and yellow liquids.

Dispensing

The high status of the neighbourhood led to the prominence of prescription dispensing. At that time all prescriptions were extemporaneously dispensed, physicians prescribing specifically for each patient in full Latin. With a few exceptions the prescriptions remained the property of the patient. They were written up in large ledger-type books and could be repeated by the pharmacist on request (as many were for years and years!) The prescription books dating from the 1860s onwards show the wide scope and distribution of the service in Bebington and Bromborough until the present National Health Service came into being in 1948. A large amount of apparatus was essential and Dutton was fully equipped for every possible pharmaceutical requirement. Most of these devices are now museum pieces.[3]

The business in Chester Street must have been of a different character. There would have been a considerable sale of 'household remedies' and of 'counter prescribing' as the working classes of the time would be unable or reluctant to pay doctor's fees. There was also in the latter half of the 19th century an enormous increase in the production of 'patent' medicines. These were secret formulae, were alleged to cure anything and everything, and backed up by wide and florid advertising encouraged widespread self-medication.[4]

The Dutton Family

John Dutton had a large family (13 children, of whom three were born in Birkenhead and ten in Rock Ferry) who were all well-educated and entered various professions. He was a knowledgeable and enterprising man. An example of the former is shown in the naming of his first son, Hugh Odard. This appears puzzling at first, until it is realised that Dutton appears in the Domesday Book where 'Odard holds it under the Earl. 2° hides.' The Earl of Chester at that time was William the Conqueror's nephew, Hugh Lupus. Odard was one of the Earl's Men - members of the Anglo-Saxon gentry who collaborated with him and were rewarded accordingly.

Hugh was born in 1858 and became a pharmaceutical chemist; he was taken into partnership with his father, the business becoming J. Dutton and Son, which remained its title until it ceased to be a pharmacy in 1969.[5] Thomas Moore Dutton became the founder and principal of a noted firm of Chester solicitors.

From census returns and from the memorabilia left in the house we get a picture of their general lifestyle. In 1871 for example, the household consisted of the parents with nine children and three servants as well as an assistant chemist and an apprentice living in the house. At that time the eldest son, Hugh, was a boarder at Aldersley Grammar School in Bunbury. Sometime between the birth of Henry in 1877 and the 1881 census John inherited Bunbury House and the family left Rock Ferry, except for Hugh who remained as assistant pharmacist, John being classed as semi-retired.

Robert attended Liverpool College and may have completed his education by the time of the move. Thomas may also have been to the college, but it is probable that all the boys went to Aldersley after the move, as day-boys. The girls probably had governesses as a Miss Mary Watson, described as a professor of music, was the living with the family in 1861. However, there were a number of 'ladies schools' available in both Bebington and Bunbury which they may have attended.

However, the most illustrious member of John Dutton's family was his fifth son, Joseph Everett Dutton, a co-discoverer of the cause of malaria.

Joseph was born in 1874, spent some of his childhood back in Bunbury where John (now semi-retired with Hugh looking after the business) had returned. After his 13+ exam he was educated at the King's School in Chester, after which he studied medicine in Liverpool. His career there was exceptionally brilliant. He obtained the Gold Medal for Anatomy and Physiology in 1894, for Materia Medica in 1895 and for Pathology in 1896. In 1897 he was awarded the Holt Fellowship in Pathology.

After working at the Liverpool Royal Infirmary for some months he joined the Liverpool School of Tropical Medicine which was founded in 1898 by Sir Alfred Lewis, a Liverpool shipowner and businessman. With ever increasing trade between Liverpool and the tropics it became essential for personnel to have some knowledge of the potentially

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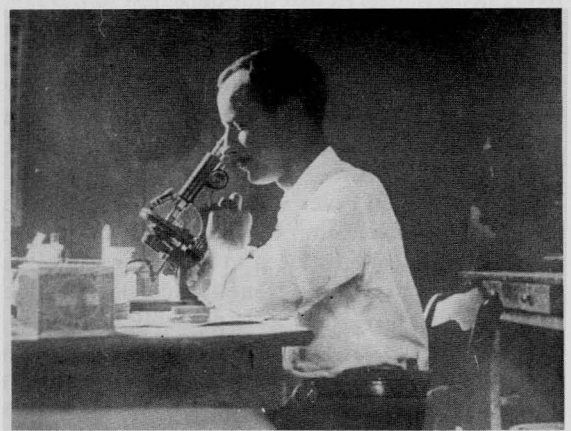
lethal hazards presented by tropical diseases about which nothing was then known. For example, until the end of the nineteenth century malaria was thought to be caused by the 'miasma' arising from swampy ground, hence the name mal(bad)air. The Liverpool school is the oldest tropical medicine school in the world and has had worldwide influence on medicine both in research and in education.

Joseph Everett Dutton



Many of Joseph's books, specimens, microscope slides, etc. were left in the house and it is assumed that he made his home there whilst a student and possibly between his many African tours. A set of 60 to 70 slides made in 1894 probably helped to win for him the gold medal in anatomy and physiology. The set was recently passed on to the School of Tropical Medicine.

The first Professor of Tropical Medicine was Sir Ronald Ross whose team Dutton joined. In 1900 he visited Nigeria with Drs H.E. Arnett (also from Rock Ferry) and J.H. Elliot to investigate malaria and filariasis. Their report was the most complete of any to date. In the following year he continued the research in the Gambia and in 1902 the leader of the team, Sir Ronald Ross, was awarded the Nobel Prize for proving the link between the mosquito and the transmission of malaria.

In 1901 Dutton was awarded the Walter Myers Fellowship and later in that year recognised in a human patient the parasite which causes sleeping

Dr.Joseph E.Dutton Sir Ronald Ross Professor W.W. Stephens
Nobel Laureate

sickness, previously known only in animals. He named this organism *Trypanosoma gambiense*.

In 1902 and 1903 he visited the Gambia and Senegal and then went to the Belgian Congo to observe and investigate the local diseases. He particularly studied Central African relapsing fever, and demonstrated that it was conveyed by infected ticks, the spirochaete responsible being subsequently named *Spirochaeta duttonii*. Unfortunately he himself contracted the disease and died of it in Kasongo, Belgian Congo, in February 1905, where there is a hospital named after him.

In his short life Dutton had a profound effect on tropical medicine, and the school founded a Chair of Entomology in his honour. The present Everett Dutton Professor of Medical Entomology is Dr M.W. Service PhD, DSc, FIBiol.

It is interesting to note that Mr William Bailey, the new headmaster of Bunbury School in 1861 introduced the teaching of practical entomology. It continued with great success, culminating in 1908 in the school being awarded the highest diploma of honour at the Franco-British Exhibition held in London in 1908, for a case showing The Life History of the Ox Warble Fly. Mr Bailey retired in 1903, but is to be hoped that he knew that one of his former pupils had demonstrated the link between the mosquito and malaria.

There is a memorial window in Bunbury church to John Dutton with an inscription reading 'To the Glory of God and in loving memory of John Dutton of Bunbury 1819-98 and his wife Ellen 1834-91 And of their son Joseph Everett 1874-1905 who died in Kasongo investigating tropical diseases'. The original was destroyed by a wartime bomb but replaced in 1952.

A grandson of John Dutton won the Grand National in 1931, which caused much local excitement. It was an event obviously more newsworthy and memorable than discoveries affecting the health of millions! However, a local newspaper did note[6] the centenary of the discovery of the *Trypanosoma* parasite by Joseph Everett Dutton, an old boy of the King's School, Chester.

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The current president of the Royal Society of Tropical Medicine and Hygiene, Professor Harold Townson of Liverpool, commented that 'Dutton's contribution was highly significant. Not only did he make the first identification of Gambian sleeping sickness in a human, he also recognised and discovered the organism for tick-borne relapsing fever.'

Acknowledgements

Many thanks to Mrs Joyce Ford for her hours of research in the County Record Office, Chester, and the Bebington and Birkenhead libraries, to the Liverpool School of Tropical Medicine for information and photographs of Dr Joseph Dutton, etc. and to Peter and Michael Tompkins for typing up this work.

A fuller version of this paper giving more details of the local history of Rock Ferry was prepared for the Rock Ferry Local History Society in 1995. The author qualified in 1928 and is still on the Register.

Endnotes and References

1. Dutton's plot was the cow pasture on the Derby House estate. It was between Derby House and the Higher Bebington Police Station which would be shown on an old map: there was one constable for the whole of Higher Bebington, Rock Ferry and Tranmere until 1851.
2. Destroyed by enemy action in 1941.
3. In 1969 some of the artefacts were taken to the new pharmacy in Runcorn, some kept in the family and some went to dealers in pharmaceutical antiques.
4. Disclosure of the ingredients of proprietary medicines became a legal requirement under the Pharmacy and Medicines Act of 1941. This caused considerable upheaval as many were seen to be useless or highly priced variations of very simple substances.
5. As well as operating as a pharmacy, the shop served as a post office between the years 1868 and 1891. Hugh Odard Dutton died in 1932 and I acquired the business in 1933. I was succeeded by my son Michael in 1959 who moved to Runcorn in 1969. The shop then became a post office once again.
6. *The Standard,* 3 October 2002, p. 17.

The Western Medical System in Colonial India

Professor Harkishan Singh

The pharmacy practised in India today, the history of which is the subject of my research, is based on the western medical system. The new system of medicine came to India with the colonisers. It is of interest to pharmacists to know about the history of entry of western medical system into the country and its consolidation during the colonial period.

Earlier a glimpse was provided of the history of the process of colonisation in general.[1] The English East India Company was founded by the end of the 16th century.[2,3] The Royal Charter on 31 December 1600 incorporated it under the title 'The Governor and Company of Merchants of London, trading into the East Indies'. In the beginning the main objective of the company was competitive trade, particularly against the Dutch merchants. Sir Thomas Roe was the first official British Ambassador (1615-19) of King James I to the court of the Mughal Emperor Jahangir. He secured some privileges and the Emperor allowed the British merchants to carry out business in India.[3] The conquest of the country was not the aim, but as the situation developed the motive of the merchants turned out to be colonisation of the land.

The medical personnel in the employ of the East India Company and later of the British Crown were instrumental in the introduction of the western medical system and bringing it to such a state that it became the official system of health care. The Indian Medical Service, the beginning of which has been traced to the beginning of the seventeenth century, emerged also as a component of the empire-building exercise. The members of the Service acquitted themselves well as competent medical professionals, with many also engaging in extra-professional work. Before describing the Indian Medical Service, particular mention should be made of two legendary figures, namely, Gabriel Boughton and William Hamilton, whose medical acumen has been stated to have aided the East India Company in establishing a foothold in the subcontinent.

Gabriel Boughton, a surgeon of the East India Company's ship *Hopewell*, was said to have cured a daughter of Emperor Shah Jahan of the effects of a severe burn. The accident took place in 1636, when the Emperor was in Camp in Decan.[6] As the legend goes, Boughton was asked to name his reward. Boughton did not ask anything for himself but begged that his countrymen might be granted the privileges of trading in Bengal without payment of any duties and of establishing factories there. This was granted. Proceeding to Bengal and intending to establish securely the privileges thus obtained, he made friendship with Prince Shah Shuja, Subedar of Bengal, a son of the Emperor, and succeeded in curing one of the ladies of his harem of a dangerous malady.[4] Consequently, he obtained the fullest aid in carrying out the Emperor's *firman*. However, a later study has not confirmed the legend that Boughton cured a daughter of Emperor Shah Jahan of accidental burns, and had obtained a *firman,* or grant in favour of the Company, from the Emperor.[7,8] No doubt there is evidence to show that Gabriel Boughton really existed, that he was surgeon of the *Hopewell*, that he was sent from Surat to Agra, to Shah Jahan's court, about the early part of 1645, and that he went to Bengal and was a member of Shah Shuja's retinue at his court at Rajmahal between 1645 and 1650. That he got a *firman* from Shah Shuja in favour of the Company seems also practically certain.

For William Hamilton it has been stated that of all the medical officers who served in India, he was possibly the most famous and was certainly the one who had been 'the greatest benefactor of his country'.[9] It has been said that the story of Gabriel Boughton might be in part apocryphal, but there is no doubt of the reality of the services of William Hamilton to his

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country, and to his masters, the East India Company. In his medical capacity he significantly contributed to the success of the East India Company.

William Hamilton originally came out to India as surgeon of the frigate *Sherborne*. He deserted his ship in 1711 and made his way to Calcutta and was there appointed second surgeon to the settlement.[9] Hamilton was medical officer of the famous embassy which in 1714 proceeded to Delhi from Calcutta, under John Surman. The Delhi throne at the time was occupied by Mohammad Farrukh Siyer. The King suffered from painful swellings in the groin, a large hydrocele, which prevented or delayed his marriage. Hamilton treated the ailment with success in 1715, and was richly rewarded for his medical service. There is no record of Hamilton urging the King to grant the request of the embassy, as a reward for his successful treatment, but it is evident that Hamilton's cure of the King was of great service to the English, by bringing the embassy into high favour in the Mughal court. The skilful treatment of the King by Hamilton was an important factor in the embassy getting practically all they wanted. The royal *firman* among other benefits granted to the East India Company included permission to the Company for free trade in Bengal and purchase of eight villages adjacent to Calcutta.

Indian Medical Service

D.G. Crawford painstakingly chronicled the history of the Indian Medical Service in 1914.[7] The salient features of the work were summed up in a review.[10] Earlier in 1907, Crawford had published a series of articles in the *Indian Medical Gazette*[11] on the service. The *Gazette* also brought out a special IMS number.[12,13] Recently the operation of the Indian Medical Service has been analysed.[14,15] All these publications are rich in information on different aspects of the Service.

The Indian Medical Service was essentially a military service, though a large proportion of its members were generally in civil employment. The officers of the IMS served the Indian troops. Officers of the Royal Army Medical Corps who were temporarily stationed in India served the British troops in India.

The first fleet of the East India Company, consisting of four ships, sailed for the east in December 1600, and each carried two surgeons. The history of the IMS is taken to have begun in 1612 when, on the formation of the Company into a joint stock business, John Woodall was appointed the first Surgeon General of the Company. Subsequently every merchant ship sent to India carried a surgeon, and some of the larger ships carried three. From early days the Company's settlements and factories in the east were provided with medical officers. The medical officers who held appointments as surgeons to the scattered settlements and factories in India were civilians. It was after the middle of the eighteenth century that an order of 20 October 1763 directed combination into one body of the various medical officers serving the Company in the 5 Presidencies, and with effect from 1 January 1764 the Indian Medical Service was formally constituted, divided into three branches, the Bengal, Madras and Bombay covenanted 'Establishments'. The Company had raised a standing army to fight the wars in Karnataka, and formation of a regular medical service had become a necessity, particularly as a military outfit. In 1786, Medical Boards were formed for the respective Presidencies, which up to their end in 1857 remained consultative rather than administrative bodies.

The Indian Medical Service had become a sought after service for the British. The system of appointment by nomination, certification by the College of Surgeons and examination by the Company's doctor continued to prevail until competitive examination was introduced and the entrance conditions and tests were made more stringent. The examination was open to all British subjects fulfilling the prerequisite conditions. The first competitive examination was held in January 1855. In 1858, after the 1857 rebellion, the Government of India was transferred from the Company to the British Crown. The manner of maintenance of all the Indian services, civil and military, remained under consideration for some time. Among others, the fate of the Indian Medical Service was in the balance for several years. There were no new admissions to the Service from 1860 to 1865. Finally, it was decided that the Indian Medical Service should be kept up under much the same conditions as before. In February 1865, the examinations for the Indian Medical Service were recommenced and held every half year. On reorganisation of the Indian Army into one whole in 1895, the last admissions to the Bengal, Madras, and Bombay Medical Services were made in July 1896. All the officers entering the service after that date were placed on one list; the first officers who entered this new development of the IMS were commissioned in January 1897.

The numbers of those in the IMS varied, generally fluctuating between 650 and 820. The East India Company had always insisted that all officers appointed to the IMS should be of pure European extraction until by the Indian Act 1853 admission by competitive examination was opened to all natural-born British subjects.[16] In the first competitive examination held in January 1855, the list of successful candidates was headed by Soorjo Coomar Goodeve Chuckerbutty, an Indian Christian from Bengal.[16] From 1855 to 1913, 104 officers with pure Indian names gained admission to the IMS.

The Indian Medical Service personnel made their mark as surgeons and physicians.[13,15] Western medical education in India owes its introduction to the IMS. Several of the Service members performed

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other administrative and technical duties. The sanitation work progressed under their care. Several members engaged in travel and exploration and carried out notable work in natural sciences and economic science. Some members had a share in the organisation of the forest department and played a part in the development of the postal system and introduction of the telegraph. They also officered the assay department of the mint and the veterinary department. Some managed prisons and mental asylums. Certain IMS members contributed to philology, ethnology and literature. Of course their war services were noteworthy in building the British empire.

As time passed the Indian Medical Service gradually became less attractive for the European entrants. Among the reasons given for this were the increased cost of living in India and a decrease in private practice, due to growing competition from the independent (mostly Indian) practitioners.[15,17] There was concern about promotion and status. The increase in Indian recruitment after 1905 and a changing political climate were also believed to be contributing factors.

The last competitive examination for admission to the IMS was held in July 1915, and appointments were now made by nomination of the Secretary of State for India. He was assisted by a selection committee in making recommendations for appointment.[18] A similar committee was also appointed in India to process the applications and forward recommendations to the Secretary of State. Indian circles favoured restoration of open competitive examination, held simultaneously in England and India. It was felt that the selection method deprived entry by the best medical talent of the country.[19]

It has been stated that until the first world war the Indian Medical Service, in spite of its basic military nature, was, in fact predominantly civil in character.[20] The Royal Commission on Public Services (1912-15) found that out of 748 officers 475 were engaged in civil duties. The 1937 reorganisation fixed the military strength at 364 and the civil at 220.

On the eve of India achieving independence, the Indian Medical Service was dissolved on 14 August 1947. Lt-Gen. R. Hay was the last Director General of the IMS.[20] The Service had made notable contributions to its credit and had established the western medical system in India.[21]

Medical Education

Instruction in the western medical system was first introduced in British India at the beginning of the nineteenth century. The origin of medical education in the country is attributable almost entirely to the Indian Medical Service.

Calcutta became the first seat of medical instruction.[22-27] The training of European and Eurasian boys for sub-medical service for the army started in 1812. The Government in 1822 established the first medical school, called the Native Medical Institution for Training Native Doctors. In 1826, a further effort was made by the Government to extend medical education by the institution of a medical class at the Calcutta Sanskrit College and by a similar class at the Calcutta Madrassa. The experience of trying to combine elements of different medical traditions proved unsatisfactory. In January 1835, the Native Medical Institution together with medical classes in the Sanskrit College and the Calcutta Madrassa were abolished and the order decreed the formation of a new College for the instruction of the Indian youth in the various branches of medical science. Consequently, Medical College at Calcutta opened on 20 February 1835. The instruction was in English. The trainees qualified as Licentiates in Medicine and Surgery until 1857 when through affiliation of the College to the newly created Calcutta University they started receiving degrees. In 1839 a Hindustani class was opened for the education of subordinate doctors and in 1852 a Bengali class was added.

At Madras a Medical School was established in February 1835, which opened its first session in July 1835.[23,28,29] The designation 'College' was given in 1850 and the institution became the Madras Medical College. The College was affiliated to Madras University in 1863. Grant Medical College at Bombay, established in the year 1845, commemorated the memory of Sir Robert Grant, Governor of Bombay. The College was affiliated to the University of Bombay in 1860.[23,30] Next, in 1860, a medical college started at Lahore.[23,31] When the Panjab University was constituted in 1882, this school became its medical faculty. The institution was named the King Edward Medical College in 1910. In addition to the above, among the other older medical degree colleges to begin were the King George's Medical College, Lucknow (founded in 1911); Carmichael Medical College, Belgachi (1916); Lady Hardinge Medical College, New Delhi (1916); Medical College, Vizagapatam (1923); Prince of Wales Medical College, Patna (1925); and Seth Gordhandas Sunderdas Medical College, Bombay (1925).[32]

A couple of years before division of the country and independence, there were some 19 medical colleges, including one each in the States of Mysore and Hyderabad.[33,34] Entrance to the colleges was after intermediate in science, and the course of study generally extended over a period of five years. The total number of students admitted into these colleges each year was about 1200. The facilities for postgraduate education in the medical colleges were few. At the time there were also 19 medical schools training medical licentiates.[35] The majority of these were maintained by the Governments. This post-matriculation course was of four years' duration. The total number of students admitted varied from year to year and generally was in the neighbourhood of 1000. The facilities available at

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the schools were not satisfactory and in 1942, the Indian Medical Council passed a resolution to abolish all the medical schools by 1947.[36]

In the early forties the source of supply of doctors was predominantly the licentiates; about 35,000 licentiates against about 12,000 graduates.[37] In 1946 there were 47,500 doctors.[38] The licentiate class served a useful purpose when graduates were not available in sufficient numbers.

Hospitals and Dispensaries

It appears that the first western medical system hospital on the Indian subcontinent existed at Goa, the Portuguese possession, before the East India Company started establishment of hospitals for their soldiers and seamen by the later part of the seventeenth century.[39]

The first hospital opened at Madras in 1664, at Fort St. George and it was enlarged in 1679. The history of the early hospitals has been recorded.[39] From the hospital of 1772 descended the Madras General Hospital, which gradually grew in strength and facilities. A 1896 report stated that the hospital possessed accommodation for 500 medical and surgical cases and had an extensive outdoor department.[28]

The establishment of a hospital at Bombay took place in 1676 and the history of hospitals in the town have been chronicled.[39] There was shifting of sites for the main hospital. The St. George's Hospital buildings on the site of old Fort George were completed in 1892. There were other hospitals which had been built through public subscription.

The first hospital in Calcutta was opened towards the end of 1707 or early 1708.[39] The hospital had its ups and downs. A hospital built around 1770 subsequently developed into the new Presidency European General Hospital at the beginning of the twentieth century. The first hospital for the native poor in Calcutta was opened about the end of 1792 or early 1793. The Calcutta Medical College Hospital started in April 1838.

The early hospitals were primarily for soldiers and their number multiplied in the cantonments. The civil population also wished for similar health care. Through governmental support and public subscription more and more hospitals were started in the towns; mofussil hospitals or dispensaries were also opened. In 1894 there were 478 hospitals and dispensaries in operation in the Madras Presidency.[28] Though this was at the time the best provision in India, it was considered very inadequate.

Gradually the number of hospitals and dispensaries increased. By the 1940s, Table 1 shows the distribution of hospitals and dispensaries in British India:[40]The analysis showed that in every province the population to be served by a single medical institution was more in rural than in urban areas. The number of medical institutions available was, in every province, far too small to provide a reasonable

Provinces	Hospitals and Dispensaries		
	Urban	*Rural*	*Total*
Assam	59	229	288
Bengal	304	1,517	1,815
Bihar	125	528	653
Bombay	316	442	758
Central Provinces and Berar	184	223	407
Delhi	21	13	34
Madras	276	972	1,248
North-West Frontier Province	59	123	182
Orissa	21	160	181
Punjab	287	778	1,065
Sind	73	154	227
United Provinces	388	456	844

Table 1.

standard of medical service to the people, particularly in the rural areas. There were several special hospitals and other institutions which attended to patients for maternity and child welfare, eye ailments, mental diseases, tuberculosis, leprosy, infections and venereal diseases.

The number of beds available in British India for the treatment of general and special diseases was about 73,000 or about 0.24 bed per thousand population.[41] This figure was extremely low compared with the then existing ratio of 7.14 in England and Wales and 10.48 in the United States. The ratio of doctors available (47,500) to the population of British India (300 millions) was about 1 to 6,000 against the 1 to 1,000 ratio existing in the United Kingdom.

The majority of the hospitals and dispensaries were maintained out of public funds and were regarded as free institutions.

Pharmacopoeias and Drugs

To meet the didactic needs and also to strengthen the introduction of western materia medica, pharmacopoeias of British origin were provided.[42,43] For materia medica classes Phillip's English translation of the *London Pharmacopoeia* was prescribed. Hindustani versions of the Pharmacopoeia became available as early as 1824; these were in Devnagri and Persian scripts. Revised translations were made in the 1840s. Even a translation in Bengali was prepared. *The Pharmacopoeia of India 1868* published under the authority of the Secretary of State for India included articles which were official in the *British Pharmacopoeia 1867*, in addition to selected indigenous products of India. The official 1868 pharmacopoeia continued in vogue until around 1885, when the *British Pharmacopoeia 1885* was made the sole authority on all matters relating to pharmacy. The British Pharmacopoeia 1898 had the *Indian and Colonial Addendum 1900*. The *British Pharmacopoeia 1914* which followed was prepared

https://doi.org/10.24355/dbbs.084-201802141340

to make it suitable for the whole British Empire. The pharmacopoeia was considered to be a kind of 'imperial pharmacopoeia' and included certain drugs of Indian origin.

The *British Pharmacopoeia 1932* included no drug from the colonies in particular. The British materia medica by now had developed a strong hold. Though there was advocacy for a separate Indian pharmacopoeia, all that happened was publication of the *Indian Pharmacopoeial List 1946* which was intended to serve as an Indian supplement to the *British Pharmacopoeia 1932*. Work on publication of the *Indian Pharmacopoeia* started only in 1948, after independence.

The western medical system held sway and had a controlling influence on health care. The drugs and related items required to keep the new medical system going were generally not available in India and had to be imported from overseas.[44] All types of medicinal, pharmaceutical and biological products were imported into British India. The focus of imports was more on finished products, prepared from drugs of foreign origin and also from Indian exports. The retail and wholesale drug trade continued to be largely dependent on imports. The most valuable was the business in proprietary and patent medicines which mostly originated abroad.

Medical Subordinates

In the nineteenth century medical hierarchy, next to the Indian Medical Service were the assistant surgeons, followed by the apothecary class, with the hospital assistants coming last among the medical subordinates.[45,46] Apothecaries and hospital assistants held medico-pharmaceutical assignments and their training and job descriptions are covered separately. For both these subordinate classes there were military and civil branches. The military apothecary class carried out duties with European troops, hospitals and depots. The civil apothecary class operated only in the Madras Presidency. The hospital assistants worked with Indian troops and civil hospitals. The apothecaries and hospital assistants nursed feelings of inferiority and complained about their designations, low salaries and pensions. At long last they were ranked as assistant surgeons and sub-assistant surgeons respectively, with better emoluments. The sub-assistant surgeon designation had also been in existence from the early nineteenth century.

For assistant surgeons also there were military and civil divisions. Military assistant surgeons were recruited from country-born European and Eurasians only. Civil assistant surgeons were chiefly Indians, with a few country-born Europeans and Eurasians among them.

The military assistant surgeons served the European soldiers and entry was through open competition in general education; the selected candidates were trained at medical colleges at Calcutta, Madras, or Bombay as military students. The period of training, earlier of three years, was of four years. They passed out of college on the final reports of their own teachers. These diplomates received a certificate qualifying them to practise physic in India.

The civil assistant surgeon branch was established in 1847 to provide a superior grade of Indian practitioners for Government duties in districts or collectorates. The service was open to Europeans and Indians, who were educated without cost to the State, and were required to possess medical qualification not below the licence in medicine and surgery of an Indian university. Appointments were made by open competition or selection. In every district there was an assistant surgeon at the headquarters station as an assistant to the civil surgeon. Besides headquarter appointments there were subdivisions and large out-dispensaries held by civil assistant surgeons.

It is of interest to refer to some 1930s source material on military assistant and sub-assistant surgeons, for the supply of which the responsibility was held by the Indian Medical Department of the Government of India.[47-49] At the time the military assistant surgeons were mostly Anglo-Indians and were trained at Government expense. They went through the course prescribed for the M.B., B.S. of the Universities of Calcutta, Madras or Bombay and served British troops under RAMC officers. Sub-assistant surgeons were trained in medical schools and held licentiate qualifications. They served Indian troops under IMS officers. Certain portions of assistant surgeon and sub-assistant surgeon personnel were seconded for civil employment.

Reforms Introduced by the Government of India Acts

The Government of India Act 1919, also referred to as Montagu-Chelmsford Reforms, brought about constitutional reforms with transference of certain subjects to the control of provincial governments and legislatures.[50] The 'transferred' subjects included local self-government, medical administration, education, agriculture, co-operative societies, etc. With certain reservations in respect of legislation by the Indian Legislature, medical administration including hospitals, dispensaries, asylums and provision for medical education, public health and sanitation, and vital statistics, were transferred to the provinces.[51]

The Government of India Act 1935 granted a larger measure of autonomy to the provinces than the 1919 Act;[52] under this new Act the distribution of health functions between the centre and provinces remained practically unchanged. As to subjects for legislation, the Act in addition to federal and provincial legislative lists, also included a concurrent list. The latter list apart from other subjects included the medical profession, lunacy and mental deficiency, and poisons and dangerous drugs, etc. Among the various

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subjects coming under the federal and concurrent legislative lists were the medical profession and other professions whose activities were related to relief and public health, e.g. nursing, pharmacy and dentistry.[53]

The Central Government exercised its main health functions, so far as the civil population was concerned, through the Department of Education, Health and Lands; it was only on 1 September 1945 that a separate Health Department was constituted.[53] In the Department, the Director General, Indian Medical Service, was the principal medical adviser to the Government of India.[54] He was also the head of the Indian Medical Service and the Indian Medical Department (Military Assistant and Sub-Assistant Surgeons) and controlled the Medical Store Depots.

In the Provincial Medical Service, the chief administrative officer - the Surgeon-General or Inspector-General - was the head of the Civil Medical Department of the Province, and was responsible for the superintendence of all hospitals, dispensaries, lunatic asylums, and similar institutions.[54,55] He advised his Government on all matters connected with the medical administration of the province. He had under him certain IMS officers, civil assistant surgeons and civil sub-assistant surgeons, and some military assistant surgeons and military sub-assistant surgeons seconded for civil work. Medical graduates possessing degrees of recognised Indian universities, after competitive examination or selection, were appointed as civil assistant surgeons while the licentiate class were recruited as sub-assistant surgeons. The assistant surgeon could rise to be a civil surgeon and after long service the sub-assistant surgeon could reach the status of assistant surgeon.

In addition to the hospitals and dispensaries provided by the Provincial Governments there were district dispensaries provided by the Municipalities. and District Boards, which were usually under the charge of practitioners of the sub-assistant class.[55]

At the district level the chief was a Civil Surgeon[54,55] responsible for the medical administration and all hospitals supported by the government in that district. He also acted as medico-legal adviser to the government. The majority of civil surgeons were appointed from the Provincial Medical Services and the remainder were IMS officers in civil employ. Civil surgeons and assistant and sub-assistant surgeons were allowed private practice.

All the principal railways maintained their own medical services.[56,57] Among the other medical agencies were the Women's Medical Service and Medical Missionary Service.[57]

Medical Council of India

In 1892, the General Medical Council of the United Kingdom accepted Indian degrees of sufficient standard to be placed on the British Medical Register.[58] Before 1920 the General Medical Council had accepted for registration the degrees and diplomas of the Universities of Bombay, Calcutta, Lucknow, Madras, and the Panjab.[59] Between 1912 and 1936 all the provinces in British India, except North-West Frontier Province and Sind, enacted Medical Registration Acts to establish medical councils in each province.[59,60] These councils, however, were concerned only with the standard of medical education in their respective provinces. There was no central or other co-ordinating authority with powers to maintain a minimum uniform standard of medical education for the whole country.

In 1921 the GMC felt that the teaching of midwifery did not reach a standard which could be recognised for a university in the United Kingdom.[58,59] In 1922, on the invitation of the Secretary of State for India, Sir Norman Walker visited India.[61] He suggested that there was a need for an All-India Medical Council. He visited India again in early 1927.[62] Among the various observations he made he laid emphasis on the need for setting up some co-ordinating authority in India, comparable to the GMC, with which the latter could communicate. This view gained support.[63] After various developments a Medical Council Bill was introduced in the Legislative Assembly in September 1932 and passed in the autumn session of 1933 as the Indian Medical Council Act 1933 effective from 1 November 1933.[59] The Medical Council of India came into existence on 15 February 1934.

The Medical Council of India was required to establish a uniform minimum standard of higher medical qualifications for the whole of British India, and the furtherance of the recognition of these qualifications in states and countries outside British India, with its corollary, the reciprocal recognition in India of approved qualifications of such states and countries.[59,64] The Council was not entrusted with the maintenance of a register, registration remaining with the provincial medical councils, nor were any disciplinary powers over medical practitioners conferred upon it.

Indian Army Medical Corps

Since we have covered in this paper the Indian Medical Service, primarily a military service, and also the military assistant and sub-assistant surgeons classes, coming under the Indian Medical Department, it is appropriate to take note of a related development which took place a few years before independence.

At the request of the Government of India, the Secretary of State for India sent a Medical Personnel (Army in India) Mission which set out in November 1942. The Mission was headed by H.S. Souttar, Chairman of Council of the British Medical Association, and included high ranking military medical officers. On the recommendation of the Mission the India Office sanctioned, in early 1943, immediate formation of the Indian Army Medical Corps, to be organised on lines similar to those of

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the Royal Army Medical Corps.[37] The new corps included both graduate and licentiate medical officers. All regular and emergency commissioned officers of the Indian Medical Service were seconded to it, and it received by transfer the whole existing personnel of the Indian Medical Department and the Indian Hospital Corps. It was felt that the decision to form the Indian Army Medical Corps, a homogenous service of officers and other ranks, in all respects similar to the RAMC, could have a profound effect for good on the war effort.

Later, it was observed that the creation of the Indian Army Medical Corps in 1943 made the abolition of the IMS in the form it existed merely a matter of time, but the constitutional changes of 1947 made it immediate.[20]

Health Survey and Development Committee 1943-45

In October 1943, the Government of India appointed the Health Survey and Development Committee to make a broad survey of the existing position in regard to health conditions and health organisation in British India and make recommendations for future developments. The Committee had an impressive membership.[65-68] The Committee carried out an in-depth study of the health-related problems, arrived at well considered recommendations, and submitted a voluminous report to the Government of India in December 1945.[33] Volume I surveyed the existing conditions, Volume II covered the recommendations, Volume III contained appendices, and Volume IV presented a summary of the whole report.

The survey showed that the available number of health personnel was very inadequate for population of British India, 300 millions at the time, and the Committee made projections for personnel requirements in 1971, after a period of 25 years, for an estimated population of 370 millions, shown in Table 2:[41]

Class of personnel	Number available	Ratio to the existing population	Suggested ratio to be attained in 1971	Number required in 1971
Doctors	47,500	1: 6000	1 to 2,000	185,000
Nurses	7,000	1:43,000	1: 300	740,000
Health Visitors	750	1: 4 million	1: 5000	74,000
Midwives	5,000	1: 60,000	1 per 100 births	100,000
Qualified Pharmacists	75	1: 4 million	1 pharmacist to 3 doctors	62,000
Qualified Dentists	1,000	1: 300,000	1: 4000	92,500

Table 2.

The above figures were revealing and the magnitude of the task for provision of trained personnel was seen to be formidable. The additional professional personnel were considered to be a necessity for a reasonably satisfactory health service to the people.

The report covered a wide field ranging from medical aid and welfare work in the remote village to promotion of research work of the highest level.[69] The emphasis was laid on the district health organisation with a view to developing it from a modest beginning into one which could provide as complete a health service as possible. It was recommended that there could be a comprehensive programme for a somewhat distant future and a short-term scheme covering a ten-year period.

The Committee proposed Ministries of Health at the Centre and in the provinces and health administration in local areas, with a Central Statutory Board of Health. It was recommended that the principal technical adviser to the Ministry of Health should be the Director-General of Health Services at the Centre and the Director of Health Services in a province; they should function in each case as the single administrative officer for the curative and preventive department of health.

Some could criticise the report as too elaborate and too ambitious. It cannot be denied, however, that the Committee reviewed the weighty problems involved and produced a scheme, characterised by both vision and attention to practical detail, for health development of the country.[70] When the report became available in 1946 and was a topic of discussion in the concerned circles, the country was fast approaching its cherished goal of attainment of independence from the British Empire. At the time the premier medical journal of Britain meaningfully editorialised the expression, 'The future Government of India, whatever it may be, has been given a blue-print for her health services which it will do well to implement at the earliest possible opportunity.'[70]

Medical Organisations

The important medical organisations in pre-independence India were the British Medical Association, the Indian Medical Association, and the All-India Licentiates' Medical Association. Brief accounts follow on the history of these associations. The British Medical Association established a Bengal branch in 1863, but it had a short existence and broke up in 1867.[71] The attempts made in 1879 to reactivate it failed and an independent Calcutta Medical Society was established instead, which lasted for fifteen years. The recognition for being the first BMA branch in India is thus not accorded to the Bengal branch. In chronological order, the following had been the position for different branches: North West and Oudh, first recognised in 1882, dissolved in 1885; South

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India and Madras (1884); Bombay (1889); Punjab (1889, dissolved in 1889 and reactivated in 1911); Deccan (1894, dissolved in 1901, reactivated as Hyderabad in 1914); Assam 1908); Baluchistan (1910); Northern Bengal (1922); Calcutta(1928); United Provinces (1930); Delhi, North West Frontier, Sind, Central Provinces, Bihar (1937).

There existed opposition to the BMA in India, for its only concern had been with conditions of service and recruitment in the Indian Medical Service and it had done nothing whatsoever in India to advance the interests of independent medical practitioners.[72] Among the causes of complaint against the BMA were the latter's attitude in regard to the need for European medical attendance upon Europeans in government service in India, and its repeatedly expressed view that the IMS on its civil side should be continued. An increasing number of Indian private practitioners had in the 1920s begun to revolt against excessive government control of the profession, and in 1928 the movement led to the founding of the All India Medical Association, which became the Indian Medical Association in 1930.[71,73] The Association started with 222 members in the year 1928-29.[73] In 1937 the Association had about sixty branches and a membership of about 2,000.[72]

The medical licentiates had their own grievances and they organised themselves into the All-India Licentiates Medical Association.[72] In 1937, the body had a membership of about 3,000. The main object of this organisation was to improve the education and position of the licentiate class so that it could have the same standing as the graduate class. Like the Indian Medical Association, the All-India Medical Licentiates' Association was also represented on the Health Survey and Development Committee.[65]

Acknowledgement

The Indian National Science Academy supports my research on the history of pharmaceutical developments in India, for which I am grateful.

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55. Reference 47: 8-10.
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57. Reference 47: 12.
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62. Medical education in India. Br Med J 1927; 2: 312-313.
63. Editorial: A medical council in India. Indian Medical Gazette 1929; 64: 27-29.
64. Medical Council of India. Reference 24: 156-162.
65. Reference 33, vol. I: pp. i-ii.
66. Megaw, J.W. Br Med J 1946; 1: 994-995. In a letter to the editor on 'The Population of India', Megaw pointed out that a distinguished Indian, Sir Joseph Bhore, was the chairman of the committee; 19 of the 25 members were Indians, the rest were Europeans. Most of the members were established experts in medicine and public health, but seven, including the chairman, were laymen.
67. Among the prominent Indians on the Committee were Dr Lakshmanaswami Mudaliar, Vice-chancellor, Madras University, and Dr B.C. Roy, President, Medical Council of India.
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Letter

The Decks of Cambridge

I was delighted to read in the *Pharmaceutical* Historian (2002; 32(4): 61) some interesting information on the Decks who are 'old friends' of mine.

The first mention I have found appears in the Wallises' *Eighteenth Century Medics*, (which also includes apothecaries, surgeons and chemists and druggists) is of Arthur Deck being apprenticed in 1796 to John Fox Priest, a well known chemist and druggist of Broad Street, Norwich for the sum of £40 and six years of apprenticeship. As was common in those days on his return to Cambridge he promptly took two apprentices who both signed on the same day, a John James Holme and a William Chambers.[1]

Arthur Deck's son was Isaiah, and it was he who moved the pharmacy from Market Hill to King's Parade in 1815. Isaiah also produced a trade card on which his address is given as 6 Victoria Terrace, Leamington, in which he termed himself an 'Operative & Dispensing Chemist (who) manufactures every article in Chemistry & Pharmacy prepared according to the latest directions of the College of Physicians of London, Edinburgh & Dublin.' He also advertised that 'Chemical Analyses were accurately performed.'[2]

Isaiah Deck had been a member of the Pharmaceutical Society since 1842, and furthermore had attended the third British Association for the Advancement of Science meeting at Cambridge in 1833 when both Dalton and Faraday were present.

Isaiah's son, named Arthur after his grandfather Arthur who was an alderman, took the Pharmaceutical Society's Major examination in the spring of 1853 when he was living in Vigo Street, Regent Street, London. He was elected a member of the Society in April and his certificate was no. 194.

Alderman Arthur Deck's eldest son, Arthur Albert, was educated at Cranleigh, apprenticed to Young and Postan's of Baker Street, London and was able to attend the lectures given at Bloomsbury Square. Afterwards he became an assistant at Squire's in Oxford Street and this was followed by managerial posts with Allsop and Quiller of Sloane Street and J.T. Davenport of Great Russell Street, WC1.

He joined his father, the Alderman, in 1893 and on the latter's death in 1903 took over the business at King's Parade. He did not retire until 1923, and died on 5 November 1948 when he had reached the not inconsiderable age of 81.

The last in the line was Reginald Deck, the son of Arthur Albert Deck who moved the business to 30 Regent Street, Cambridge.

There is a letter from Thomas Godding of High Wycombe, who wrote on 24 February 1945. He reminisced about the 'old Prelim' in the early 1890s which had taken place in Cambridge. They were supervised by 'that genial soul, the late Mr Deck'. He then goes on to relate that "We paraded at his pharmacy opposite King's College and were asked to hand over any cribs, and then he gave a talk on the inadvisability of entering pharmacy[!] The exam was held in a church hall near Great St Mary's; some of us being otherwise qualified were taking the exam to obtain a pass in the metric system required for pharmacy entrants. The papers were easy, especially the Latin for those from the middle forms of the old Grammar School. In the 1870s my grandfather, Joseph Sturton of Fitzroy Street [Cambridge]

https://doi.org/10.24355/dbbs.084-201802141340

sometimes conducted the 'Prelim' in his own parlour. It was his custom to have a 15 minute break at 11 a.m. and handed round sherry and biscuits." (Those were the days!)[3]

The last of the pharmaceutical line was Reginald, who died in June 1959. He had qualified in 1899 and retired fifty years later in 1945. When he was 17 he was apprenticed for four years to James Spearing of Southampton, for which the premium was £100. Spearing had worked for many years at John Bell's of Oxford Street and ran his own pharmacy on very much the same lines, such as no wages for the unfortunate apprentice![4]

1. Wallis, PJ and RV. *Eighteenth Century Medics,* 2nd edn. Newcastle-upon-Tyne: Phibb, 1988: 161.
2. Ibid. p. 161, for which he charged £20 and £150 respectively.
3. Illustrated in Pharm J 1953 (21 Nov); 171.
4. Letter. Pharm J 1950 (Aug); 165.

J. Burnby Wirksworth, January 2003

Letter

Winchesters and Corbyns

As a consequence of an article on weights and measures which I wrote recently, some correspondence has been generated on the subject of Winchesters and Corbyns. Why, asks a reader, is a bottle which contains 80 fluid ounces, or two quarts, known as a Winchester quart? Writing in *the Chemist and Druggist* in 1911 the commentator 'Xrayser' suggested that there was in England a Winchester fluid measure of approximately French standard in which the pint was an old French wine-quart and the quart presumably about two wine-quarts, his information being based on a quotation from Johnson's *Dictionary*.[1] It was suggested that these measures might have been increased over time in line with the old ale-gallon of 163 fluid ounces, the Winchester quart having half that capacity.

'Xrayser' indicated that the Corbyn was a squat bottle of the same diameter as a Winchester but containing half the volume, with its name perhaps derived from 'the well-known firm which bears it'. Another correspondent suggested that Winchester and Corbyn were interchangeable terms, the latter still being in use by BDH in the early post-war years. 'Xrayser' reported that the *Encyclopaedic Dictionary* (has anyone ever heard of this?) stated that a 'Winchester pint' was one quart, 'a measure a little more than a wine-pint'. Perhaps a wine-pint was a measure rather larger than the present 700 mL bottle.

Can any reader throw more light on the matter of Winchester quarts and Corbyns?

John Hunt Weymouth, January 2003

1. Xrayser. Observations and Reflections. Chem Drugg 1911(4 Feb):49.

Records

(continued from December 2002, p. 58)

The Historical Manuscripts Commision hasreported the following accessions relating to pharmacy in **2001**:

Local Repositories in England

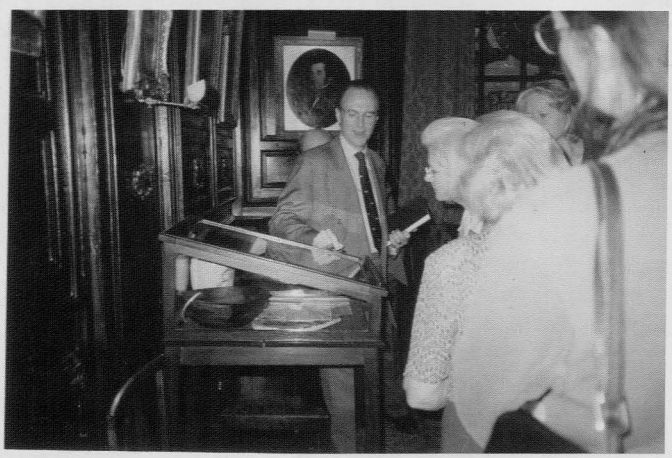
Northumberland Record Office, Melton Park, North Gosforth, Newcastle upon Tyne NE3: Prescription ledger of unidentified chemist, Morpeth 1947-50 (NRO 5677)
Nottinghamshire Archives, County House, Castle Meadow Road, Nottingham NG2 1AG: Newball & Mason Ltd, manufacturing chemists, Nottingham: records 19th-20th cent
Surrey History Centre, 130 Goldsworth Road, Woking GU211ND: Dan Clare, pharmacist, Cranleigh: prescription books 1961-69 (6998)
Tyne and Wear Archives Service, Blandford House, Blandford Square, Newcastle Upon Tyne NE14JA: Royal Victoria Infirmary, Newcastle: operation book and staff photographs c1894-95
West Yorkshire Archive Service, Calderdale, Central Library, Northgate House, Northgate, Halifax HX1 1 UN: George Oldroyd, chemist, Halifax: records 1883-1967 (MISC: 1039)

Local Repositories in Scotland

Dundee City Archives, 1 Shore Terrace, Dundee DD1 3BY. Correspondence Address : Department of Support Services, 21 City Square, Dundee DD1 3BY: AY Barrie, chemist, Dundee: prescription books, registers of cocaine, heroin and morphine, formula books, accounts 1905-91
Edinburgh City Archives, Department of Corporate Services, City Chambers, High Street, Edinburgh EH1 1YJ: Duncan, Flockhart & Co Ltd, manufacturing chemists, Edinburgh: prescription books c 1920-29; formulary for preparations for T & H Smith Ltd, manufacturing chemists, Glasgow c 1930 (Acc 589)
Highland Council Archive, Inverness Library, Farraline Park, Inverness IV1 1NH: Pharmacy, Nairn: prescription books 1898-1916 (HCA/D612)

https://doi.org/10.24355/dbbs.084-201802141340

Dr Brian Wells, chairman of Hull branch, Dr Stuart Anderson, president, and Peter Homan, honorary secretary, after the joint meeting of BSHP with the Hull and District branch held on 16 October 2002. Dr Stuart Anderson gave a talk on 'Those Magnificent Men and their Medicine Machines: The Glorious History of Pharmaceutical Invention' Photo: John Savage



Visit to the Society of Apothecaries, Blackfriars on 13 November 2002. Mr Nicholas Wood guides members around the exhibits (above and left). Photo: Peter Homan

 ISSN: 0079-1393

Typeset and Produced by Ralph Allen Press Ltd, Bath BA1 1UT

https://doi.org/10.24355/dbbs.084-201802141340

PHARMACEUTICAL HISTORIAN

Vol. 33 No.2
June 2003

British Society for the History of Pharmacy
840 Melton Road, Thurmaston, LEICESTER LE4 8BN

Founded 1967

https://doi.org/10.24355/dbbs.084-201802141340

PHARMACEUTICAL HISTORIAN

Editor: Ainley Wade, BPharm, MPhil, FRPharmS
840 Melton Road, Thurmaston, LEICESTER LE4 8BN

Contents

Diary

Wednesday 2 July 2003
Visit to Museum of Garden History, Lambeth Road (opposite RPSGB), including a guided tour of the museum, garden and graveyard. Meet outside museum.

Thursday 13 November 2003
Joint Meeting with Society of Apothecaries Blackfriars Lane, London. 'From Dioscorides to Derek Dunlop: developing quality standards for medicines' by Dr Michael Jepson.

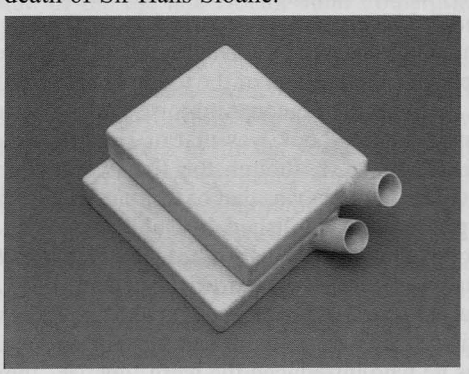
International Society for the History of Pharmacy
The next meeting of the International Society for the History of Pharmacy will be the **36th International Congress, organised by the Romanian Society for the History of Pharmacy** in Sinaia, north of Bucharest, Romania on 24-27 September, 2003. Details can be obtained from the BSHP secretary or from the International Society website at **www.histpharm.org**

Advance notice

Members are advised that the **37th International Congress** of the International Society for the History of Pharmacy will be organised by the British Society for the History of Pharmacy and is planned for late **June 2005** in Edinburgh.

Museum seeks Open House volunteers
The Museum of the Royal Pharmaceutical Society is taking part in this year's London Open House 2003 weekend by providing guided tours of the Society's headquarters and the museum displays on the morning of Saturday 20th September. As in previous years, it would very much welcome any voluntary guides to assist museum staff in showing visitors around the building. Full training given, travel expenses paid, and the possibility of an Open House pass that allows priority entrance to other participating buildings over the weekend. If you are interested or would like further information, please contact
Briony Hudson, Keeper of the Museum Collections, RPSGB, 1 Lambeth High Street, London SE1 7JN.
Tel. 020 7572 2210 or email bhudson@rpsgb.org.uk

The Royal Pharmaceutical Society's museum lends objects to commemorate key anniversaries
The Royal Pharmaceutical Society of Great Britain's museum continues to increase access to its collections by lending objects to two museums. The Alexander Fleming Laboratory Museum and the Royal College of Physicians are both celebrating important medical anniversaries: the 75th anniversary of Alexander Fleming's discovery of penicillin and 250 years since the death of Sir Hans Sloane.



This ceramic culture vessel was used for small scale production of penicillin at Oxford during 1941 and 1942. Mass production proved impossible because of the war. Howard Florey and his colleague Norman Heatley worked with companies in the US to achieve factory production in time for supplies of the drug to be available for the 1944 Allied invasion of Europe.
Donated to the museum by Norman Heatley.

https://doi.org/10.24355/dbbs.084-201802141340

Evidence from the *Derby Mercury*, 1790-1800 for Dental Services in the North Midlands

Dr J. Burnby

The *Derby Mercury* was one of the earliest of the provincial newspapers, starting in 1732 and in continuous production for over two hundred years with one short break coinciding with the arrival of the Young Pretender in Derby during the 1745 Rebellion. Its area of influence was not confined to Derbyshire, but also covered much of Staffordshire, south Nottinghamshire and north Leicestershire. There were no very large expanding towns in its orbit, Sheffield, Manchester and Birmingham lying very much on the periphery of its distribution.

The Early History of Dentistry

It is difficult to discover when tooth-drawing made its first appearance as a specialised occupation, but certainly it was described as such from the late mediaeval period. The Calendar of Patent Rolls for example informs us that "In April 1400 Mathew Flynt, a toothdrawer, was allocated 6d. a day at the Exchequer for treating 'any poor lieges of the King' in London without charge".[1] By 1515 there are listed a number of callings in the Pardoner's book, one of which was 'Mathewe, tooth drawer of London'.[2] In her book *Barbers and Barber-Surgeons of London,* Jessie Dobson relates that a John Bryckett, citizen and toothdrawer, had been admitted to the Freedom of London in 1551.[3] As in any occupation there were some who broke the law. Samuel Robbes of Hadley, Middlesex, a tooth-drawer, and others assaulted 'one of his Majesty's officers within His Highness' Chase of Enfield' in 1610.[4]

Books on the subject of dentistry began to appear as early as the Frenchman Jacques Guillemeau's *The French Chirugerie*, a translation in 1597. He examined the question of pyorrhoea and the harelip as well as the extraction of the tooth. His master had been the famous surgeon Ambroise Paré. After this the most notable book was that of Helkiah Crooke published in 1631, though the first work entirely devoted to dentistry was that of Charles Allen which was printed and published in Dublin in 1686. He describes the 'transplantation' of teeth and also that he made instruments and artificial teeth.

It was Pierre Fauchard, nicknamed 'the Father of Dentistry', who set the craft on a systematic footing. It was he who introduced the word 'dentist', though for many years the English clung fiercely to the title of 'Operator for the teeth'.

A man who is known to have taken an interest in teeth was John Hunter, the famous surgeon. On his return from Portugal in 1763, he became a partner to a fashionable dentist named Spence, once a barber in Gray's Inn Lane, but now successful in Soho Square. During this partnership he wrote *Natural History of the Human Teeth* and it may be regarded as the first scientific study of human teeth in English. In it he recommended that teeth could be drilled, the pulp removed and then filled.

Christine Hillam, one of our most eminent dental historians has written 'Dental practice grew out of the coming together of two traditions, that of the tooth-drawer, and that of the skilled artisans and had very little association with medicine'.[5] At first sight this seems a most unlikely combination, the toothdrawer with his origin in mediaeval times, and the skilled artisan such as the metalworker or watchmaker of the seventeenth century. But James Blair of Leicester had been a wigmaker and perfumer, George Bott of Nottingham a wool sorter (and later a patent medicine vendor), and Benjamin Wildsmith a perruke maker in Manchester.

Overseas connections with one of the Continental countries were also an asset, such as the family of Cracows,[6] Bartholomew Ruspini who orginated in Bergamo, Italy,[7] the Hemets, and many another. Nevertheless until the middle to end of the eighteenth century the bulk of dental treatment was still limited to extraction and possibly to cleaning of the teeth.

Dental Services

Dental services in the area under study were very meagre, even in the county town of Derby, probably because of the isolated nature of the northern half of the area. George Bott wrote in the *Derby Mercury* of 29 July 1790 that 'his friends at Chesterfield' could not expect him on 29 July 1790 as several 'unforseen Events' prevented his attendance in the first week of August, however if health permitted he would be coming on the 19th or 20th for three or four days.[8] Bott lived and practised dentistry for many years after 1790, but no notices were printed during the decade that he would be coming to Derbyshire.

The only other itinerant dentist, which most of them were outside London at this period, was a 'Doctor Wes–el from C–eaves in Germany' (presumably a Dr Wessel of Cleaves or Cleves). He would offer his services to those 'afflicted with Corns in their Feet' and 'He also performs every operation of the Teeth, and sells a Powder and tincture for the cleaning and preserving of them.' He would be available at Fritche's grocer in the Corn Market.[9]

The only other visitor was a certain Dr Katterfelto, M.D., a self-proclaimed 'Teacher and Professor of Natural and Experimental Philosophy, Astronomy and Natural History'. Gustavus Katterfelto was a man of some scientific knowledge and abilty, not to be totally scorned, to which he added clever showmanship. He gave lectures and exciting demonstrations with the use of magnets and magnifying glasses, his black cats and flying pigs undoubtedly giving good entertainment. He had had a brisk sale for an influenza cure in London, but now

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in Derby was confining himself to a tincture for sprains which cost five shillings, and also a 'Tincture for the Toothach' (sic) which had no price given.

The *Derby Mercury* gives the impression that there were almost no dental services in the area. An exception was the obituary of a Mr J. Sowter, a chiropodist and surgeon dentist of Ashby-de-la-Zouch, who had died on 4th December 1799. Not that the newspaper was averse to the newly developing profession, for it printed in February 1793 the following story:

> Lately died at Wheel, near Beverly, George Wilson. This poor man being afflicted with the tooth-ache had the tooth drawn by a common farrier; an inflammation succeeded, which terminated his existence in a few days.

It is interesting to note that even the more extravagant quack medicine vendors such as Isaac Swainson, who was said to be making £5,000 from the sale of his 'Genuine Syrup of de Velno', were promoting the practice of professional dentistry. In July 1795, Mr Benjamin Young of Hanover Street, London, surgeon and surgeon dentist, wrote of a case of 'Bronchocele or Goitre called in England the Derbyshire Neck' which he maintained he had cured by prescribing Swainson's Velno's Syrup. To this case Swainson added:

> Concerning this gentleman whose merits and talents have not had time to make themselves sufficiently known. Mr Swainson will [only add] that he applies uncommon ingenuity, and a great general knowledge as a regular and well educated surgeon to the art of a surgeon-dentist, which is generally practised by ignorant and imprudent empirics; and that by his Judgement, skill and humanity, he rescues that important branch of surgery from the dishonour and reproach which have generally attended it.

Dental Preparations

During the decade 1790–1800, there are some 26 different powders, tinctures etc. advertised as dental preparations in a total of 1501 advertisements. Tooth-powders or dentifrices account for ten of them, tinctures for toothache six, and tinctures for improving the condition of the gums and teeth, as well as sweetening the breath, a further six. An elixir, lozenges and a solid preparation, possibly using mastic or cera alb, accounted for one each. There was also a styptic which could be used for other purposes than dental.[10]

There are only eleven issues of the newspaper missing from the whole decade which means that an analysis of the advertisements in the *Derby Mercury* can be made. The first point to notice is the steep fall in advertisements in 1794 with little improvement in 1795. It would seem fairly certain that this was a result of the fact that on 1 February 1793, Revolutionary France had declared war against Britain. Due it would seem, to over confidence, there was in 1793 no increase in taxation or in the armed forces. In the winter of 1794, Britain was soundly defeated in the Low Countries and in the following two years there were great losses in the West Indian campaigns. By 1797, there was a financial crisis with the suspension of cash payments; invasion was threatened and Ireland was in revolt. The great naval victories of Duncan at Camperdown and Nelson at Aboukir Bay, however, began to take effect. The threat of invasion was reduced and the eastern Mediterranean was freed from French overlordship.

The steep upward trend in 1799 may be illusory and only due to the arrival on the scene in late 1798 of 'Grey's Tooth-Ach Lozenges' with heavy advertising when introducing the lozenges to the public.

There is some evidence of seasonal variation in the distribution of the advertising. In seven out of ten cases, it is heavier between January and June than between July and December.

The Advertisers

The top scorer during the decade was Thomas Greenough with 204 adverts. He was a member of the London Society of Apothecaries and had taken out his first patent in 1744 for one of his toothache tinctures which contained 26 ingredients. Following closely was Thomas Jackson of 95, Fleet Market, London. 'Jackson's British Tooth Powder' however usually only received a one-line advert, the bulk of the notice being given over to either 'Jackson's Ointment for the Itch' or his 'Asthmatic Candy', but nevertheless reached the figure of 164.

Coming third was Mrs Wyle's with 146. Unlike most of the others she was not London based and shopkeepers had to apply directly to her, which may be the reason that her product was cheaper than the others at 7°d. (3p.) She was careful to point out that her toothache cure was not a liquid, 'which rendered it very convenient and portable for the pocket; it was particularly recommended to gentlemen in the army, navy and to travellers.' She also claimed that the medicine was prepared from a manuscript prescription of the the late Doctor John Fothergill who had died a few years earlier.

Close behind was Simson's 'Infallible Aethereal Tincture for Toothach' which advertised 145 times, whilst 'The 'Devonshire Tooth and Tooth Powder' appeared 116 times in the ten years. In 1790 it was prepared by Lewis & Co., surgeon-dentists of No. 3 Salisbury Street, Strand, London, but by 1791 a Mr Perry of the Royal Navy was the maker.

Only two people advertised toothbrushes, George Bott (with 67 adverts) and the widow of Ninian Trotter, 'chymist of Bear-lane who supplied Debraw'. She supplied 'India Tooth Brushes' at a 1s. each as well as 'Trotter's Asiatic Tooth Powder' at 2s.9d. at her warehouse, No. 36 Surrey-street in the Strand.[11] Her success was such that in 1796 she announced that she had had to move to larger premises at No. 3 Beaufort Buildings, Strand. She advertised 93 times. 'Grey's Lozenges for Tooth Ach' came next with 75 adverts during the decade, but he too was a late

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starter, not advertising until 1798.

The Chevalier Ruspini's appearance is only to be expected and he has 69 notices, one of these dealing solely with his styptic and also disassociating himself from a certain Lorenzo Garvini. He tells the public also that he will be reducing his prices. Then there was the 'local' man George Bott with 67 advertisements.

Other dental preparations advertised only from time to time were 'Hamilton's Tincture for the Tooth Ache' (36 times), Harrison & Co's 'Her Royal Highness the Dutchess (sic) of York's Tooth Powder' (23), Stringer's (54), Moor's (35), Amboyna (33) and Crawcour's who were regarded as having become rather disreputable (21).

Edward Complin also advertised his 'Complin's Specific' on 21 occasions, which not only cured toothache, but a swollen face and rheumatic complaints as well. Complin was a chemist & druggist in Bishopsgate Street, London, the son of an apothecary and surgeon of Goodmansfields who had a tenuous link with the poet John Keats.[12]

Distribution

Greenough's tinctures were widely advertised throughout England and Scotland, as was the preparation of Mrs Wyles, but some of the others were more local. The Botts confined themselves to the Midlands near their bases of Nottingham and Birmingham. Hamilton's 'Tincture' is found only in Hereford and district with a light scattering in Worcester and Derby areas. Some did not penetrate south of the Scottish border, such as Mr Rae's Powder and Tincture for the Teeth, or Mr Steuart, a dentist and perfumer who had a warehouse in Prince's Street called the Golden Civit Cat. He advertised his Turkish Elixir for toothache or scurvy of the gums, and his Byzantian Dentifrice which amongst its many valuable attributes 'raised the inflammable wind from the stomach'. He claimed that they were obtainable from many perfume shops in London and other towns in Europe.

In 1790 there was a total of 311 advertisements for dental products, but in each year the number dropped, declining to 62 in 1798 and then rising slightly to 115 the following year. This may be attributed to the wars with France, but other forces were at work too.

In 1795 James Barclay seems to have decided not to push the late Thomas Jackson's 'British Tooth Powder', and the Crawcours, although much involved in visits to the Norwich and Cambridge areas, ceased advertising in other areas. The Hemet's also much reduced their adverts of 'Essence of Pearl' and 'Pearl Dentifrice' except in Northumberland, as did the sellers of the 'Dutchess of York's Powder'.

The competition was lessening, which possibly gave some entrepreneurs the idea of filling the gap. Neither the chemist & druggist, Edward Complin, nor the inventor of Grey's Lozenges who would not declare himself as other than 'A Medical Gentleman of eminence in his Profession' appeared on the scene before 1798 and 1799. It is their products, together with the introduction of Amboyna Tooth Powder which was almost entirely advertised in only East Anglia, that account for the increase to 115 in 1799. The final total in the *Derby Mercury* was 1,501.

Monetary Value of the Recipes

The formulae of proprietary medicines had a not inconsiderable monetary value. The *Derby Mercury* of 4 October 1792 relates that Dr Waite directed in his will that his executrix was to 'dispose of the recipe' for his worm medicine, whereupon it was sold by public auction at Baker's Coffee House in Change Alley on 15th March. It was bought by John Evans of 42 Long-lane and by William Howard of Reading.

Recipes

It is unfortunately difficult to find out today the exact ingredients of an eighteenth century nostrum. Even if patented, the language was frequently so obscure, probably deliberately so, as to make recognition doubtful. Proprietors frequently went to considerable lengths to emphasise the safety of their products.

The wholesalers of 'Grey's Tooth-Ach Lozenges' declared that they contained:

> no particle of opium, no acrid, heating or irritating ingredient. ... Its action consists in producing from the Teeth affected a plentiful flow of watery humour by which the pain and inflammation of the Nerve of the Tooth is immediately Cured.

Mrs Trotter likewise, proclaimed that her 'Asiatic Tooth Powder' possessed:

> no acid that can corrode the enamel, and is extremely safe in its use. From its astringency it strengthens the Gums, eradicates the Scurvy.

Both Edward Complin and John Wye, the distributor of Simson's Infallible Aethereal Tincture emphasised that there would be no injury to the gums or the nerve destroyed.

Tooth powders were based on three or four components. Abrasives were chalk, orris root, heavy magnesium carbonate or cuttlefish bone; antiseptics and detergents were represented by powdered hard soap and borax; astringents could be the tannins of cinchona bark, bayberry leaves, essence of sassafras, and, very commonly, tincture of myrrh. Aromatic substances were often added as breath sweeteners, common ones being cardamomum, cloves, peppermint, oil of lemon and aniseed.

Toothache tinctures made use of the thymol and eugenol contained in the oils of thyme or clove, as well as oil of cajuput. More dangerously, tincture of aconite is known to have been used.[14]

Conclusion

That there was an interest in the care of teeth,as well as a desire to treat toothache by means other than extraction, is proved by the number of dental products advertised. The cosmetic and social improvements brought about for their users was strongly emphasised; teeth are made to gleam like pearls and

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breath is sweetened. Derby, like other county towns, had its fashionable Assembly Rooms, and social life was centred on the numerous stately homes of the North Midlands so providing the necessary spur for the use of dentifrice and tincture.

Endotes and References

1. Calendar of Patent Rolls, 1399-1401, p. 255
2. Lindsay, L. The Tooth-drawer. *Indian and Eastern Druggist* 1927 (April): 88.
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4. Middlesex County Records, Reports 1902-1928, p. 169.
5. Hillam, C. Dental Practice in England in the 1790s. In *Dental Practice in Europe at the End of the Eighteenth Century.* September 1992, Liverpool.
6. The Cracows originated as Polish Jews.
7. Ruspini came from Bergamo, Italy.
8. George Bott consistently used the title of 'dentist', although 'surgeon dentist' was also commonly used. The death of his son William who was to have followed his father in his business in March 1797 and his other son's bankruptcy must have been bitter blows.
9. Wessel may have been the same man with whom King's College, Aberdeen had had so much trouble twenty years earlier. Eventually in November 1801 King's College made a rule that 'In future, every candidate for a degree in Medicine must oblige himself that he is not, nor will be, concerned in the sale of Quack Medicines of any description'.
10. P.S. Brown in his *Medical History* articles found that in the years 1744-1799, 52 different dental preparations were represented.
11. An advertisement of 1662 indicates that dentifrices were then applied with the finger. 'India Dentiffick Roots' used as brushes were first advertised in 1707. See Anon. Some early press advertisements. *Chem Drugg* 1930; 113: 833-41.
12. Edward Complin's sister married John Hammond, brother of John Keats' apprentice master. Edward was bequeathed his father's, William Complin's, book of herbals
13. Bacon was a forerunner of Sangers, pharmaceutical sundriesman, distributor and manufacturer, which was still active in the 1960s.
14. For a fuller discussion see Court, W.E. Dental formulae. *Pharm Hist* 1982; 12 (3): 7-8.

Standard Operating Procedures in community pharmacy: an historical example

Dr Christiane Staiger

In February 1999, the Council of the Royal Pharmaceutical Society approved the introduction of a new policy as part of a process to support clinical governance in pharmacy settings. From January 2005, pharmacists would be required to put in place and operate written standard operating procedures (SOPs) covering the dispensing process.[1]

The Society defines an SOP as: 'A standard operating procedure is a written specification of what should be done, when, where and by whom.' Therefore, in the near future, pharmacists are being asked to find the time to prepare written procedures for the way in which dispensing is handled in their pharmacies. In other words, an SOP seems to be essentially a documented version of the dispensing procedures that the pharmacist already has in place.[2]

It seems that while most hospital and industrial pharmacists may be familiar with SOP's the concept will be new for many community pharmacists.[3,4] But a look into the past shows that community pharmacists were already implementing such procedures in the 19th century. A significant early example of an historical SOP can be found in Wales.

Drane's Rules for Dispensing

In 1889, Robert Drane (1833-1914) implemented 'Rules for Dispensing' in his pharmacy shop at Queen Street, Cardiff.[5,6] He saw them as the service standard for his business and every assistant had to sign them. The original shows six signatures, the last dated March 21st, 1900.[7]

Drane's rules [slightly amended] were:

If any assistant is found violating the following Rules he will subject himself to instant dismissal without the usual terms of notice*. His services will be accepted only on condition that he signs them and thereby assents to the penalty attaching to their violation.

*The usual terms of notice are, one kalendar month or one kalendar month's salary, but in case of such instant dismissal under these rules his Railway fare shall be allowed him up to two hundred miles.

1. Every prescription is to be copied and the labels written before it is dispensed so that a misreading may have a chance of correction.

2. Ingredients of great potency are to be added last so as to avoid their being used twice.

3. No element of dangerous activity is ever to be used unless checked by a second person as to its identity & quantity - the dispenser naming such element & its quantity to such second person - all powerful liquids to be measured in minim measures & solids ordered in minuite doses such as arsenic aconitia strychnine etc. are to be kept in a diluted form - such as one in eight - so as to avoid the danger of weighing a single grain upon scales insufficiently sensitive.

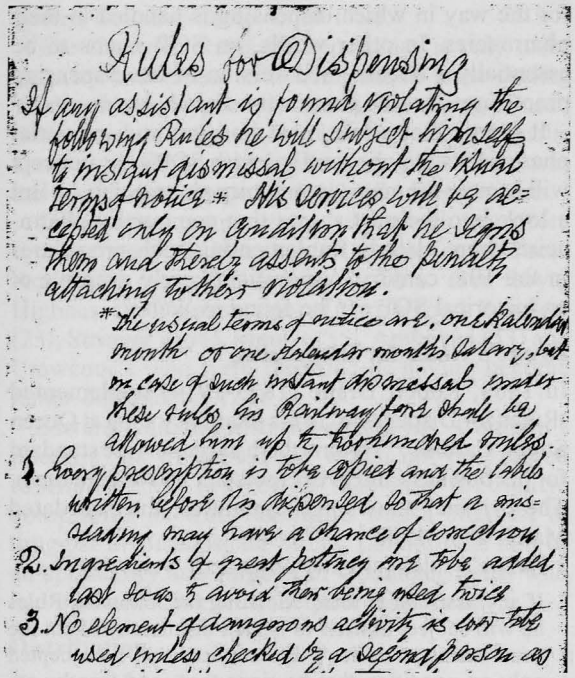
4. All infusions are to be freshly prepared in strict accordance with the B.P. or my own special instructions in some exceptional case.

5. No drug or chemical of stale or questionable quality or purity is to be used.

6. No discretion on the part of the dispenser is to traverse the words of the prescription or qualify in anyway the intention of the writer except in the case of obvious error on his part. (If atropia morphia cocaine etc. are ordered the pure alkaloids & not their salts are to be used). In case of doubt - appeal is to be made to me, or communication had with the prescriber as to his intention but the patient is not to be informed of such doubt or uncertainty.

7. No prescription is to be dispensed from the original when once copied but from the Book where note is to be made of peculiarities, difficulties, unexpected results,

https://doi.org/10.24355/dbbs.084-201802141340



Rules for Dispensing

If any assistant is found violating the following Rules he will subject himself to instant dismissal without the usual terms of notice * His services will be accepted only on condition that he signs them and thereby assents to the penalty attaching to their violation.

* The usual terms of notice are, one Calendar month or one Calendar month's Salary, but in case of such instant dismissal under these rules his Railway fares shall be allowed him up to Birmingham only.

1. Every prescription is to be copied and the labels written before it is dispensed so that a mistake may have a chance of correction

2. Ingredients of great potency are to be added last so as to avoid their being used twice

3. No element of dangerous activity is ever to be used unless checked by a second person as

The start of Drane's Rules for Dispensing, 1889

appearance, excipients or any other data necessary to the production of a uniform result - at different times or by a different dispenser.

8. All remedies for external use are to be made readily distinguishable by having their directions written upon red labels, bearing the words in conspicuous print POISON or NOT to be TAKEN. Every reasonable precaution is to be taken but a chemist should avoid accepting the implied responsibility of supplying idiots with common sense or preventing fools drinking poisons in the dark - It is an open question whether the world would not be benefitted by their elimination.

9. All mixtures whose elements form precipitates or separate into different strata, or are at all likely to do after a time, are to have a 'shake label'.

10. Before any medicine is finally disposed of the Prescription is to be read again & the label checked. If any doubt arises as to its correctness while dispensing or subsequently it is to be summarily rejected & prepared again.

11. If in spite of these precautions some error is discovered or suspected after the medicine has been delivered NO time is to be lost NO Trouble is to be thought too much NO expence spared in correcting it as far as correction is possible.

12. All Bottles, Wrappers and Labels to be clean & new - not used a second time - no speks, stains or blots are to be allowed to pass. All bits of foreign matter seen in medicines are to be removed by passage through some strainer such as wool or paper - or otherwise - & all clean white parcels are to be wrapped in whitey brown paper so as to reach their destination undefiled.

Rob. Drane

Discussion

Drane's rules show a great patient orientation. His main focus was to avoid harm and improve safety for his clients even if this meant additional work for the employees, such as copying all prescriptions or double checking the preparation process.[8] He clearly pointed out that a uniform quality of the drug preparation as well as the dispensing process were essential for the patients' confidence in the medicine. Therefore, Drane did not allow any doubts by the patient and included also regulations about the information or non-information given by the dispenser. Knowing that in a daily routine not every part of the dispensing procedure might be of the same importance for the personnel he persisted on the awareness of the full dispensing process and took care of every step in his rules. Drane's rules for dispensing can therefore be seen as an early example of Standard Operating Procedures in community pharmacy. It is likely that Drane was not the only early pioneer in that area and with further research a comprehensive history of SOPs may come to light.

Acknowledgement. I greatly thank Terence D. Turner, OBE, Cardiff, who kindly gave me access to the relevant documents.

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Some notes on an early nineteenth century manuscript medical receipt book

W A Jackson

Introduction

In the reserve collections of Manchester University Medical School Museum there is a battered leather bound pocket book[1] containing 64 pages. Seven of these are accounts for unspecified goods or services, one of which is dated 1825 and another 1842, but by far the majority contain manuscript receipts for

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medicines to treat a wide range of medical conditions. Most of these are for humans, but a few are for animals, and one is for a 'good Salve for Cow or Horse or Man'. The cover of the book is blocked in gold with the words 'Francis Woodcock Brown Bear Brewhouse Goodmans Fields 1768', but it appears to have been written by somebody named Evan Jones in the early nineteenth century. This name, a mention of Chirk Castle Mill, and frequent use of the word 'whatever' suggest that it was compiled in the Welsh Marches, probably in the Wrexham area.

Much of the script is legible though it is difficult to decipher some words, a problem which is aggravated by the unfamiliar spelling. This is often phonetic and, I suspect, in the dialect of the Welsh Border in early to mid-nineteenth century. It is not uncommon to find the same word spelt differently on different pages. The use of upper case letters is somewhat random, punctuation is virtually non-existent, and where apostrophes are used the comma is written in subscript, not superscript. Quantities are frequently expressed in pennyworths, a common practice at a time when there was a relatively stable economy. This custom still prevailed in many areas into the 1960s, and one had to be able to interpret the handwritten formulae on the disintegrating pieces of paper, most of them originally written by the customers' grandmothers or great-grandmothers, that were brought into the shop to be dispensed. One needed sufficient knowledge of these traditional remedies to be able to convert the outdated prices into reasonable quantities, and then explain why you were charging three shillings (15p) for the ingredients on the paper which added up to sixpence (2° p). Remember that it was not usual to charge a dispensing fee on such remedies at this time, and the customer would usually supply the bottle.

Often it was necessary to discover the nature of the complaint to be treated in order to identify some ingredients. I remember notes asking for Fry's Balswump (Friar's Balsam), Gum Crackum (Tincture of Guiacum), Hippy Pecky Hana (Tincture of Ipecacuanha) and Hippy Dilly Dock (Opodeldoc or Soap Liniment).

It must be remembered that many words were pronounced differently in the seventeenth and eighteenth centuries, and that changes would be slow to be adopted in country areas, so phonetic spelling would result in the use of many strange-looking words well into the eighteen hundreds. The letter 'e' could be pronounced as a short 'a' (e.g. verdigris became vardigris). Conversely, because 'ea' was pronounced as 'ay' we find 'sublimate' being written as 'suplemeat'. The use of 'o', 'u' and 'ou' was confused, and, in the manuscript, further complicated by using the Welsh vowel 'w' that is now pronounced as 'oo'. Both definite and indefinite articles were frequently omitted.[2] In the remedies that I quote from the receipt book I have retained the original spelling, and have only added the modern equivalent in parentheses after words where I thought that the meaning might not be obvious.

The Receipts

The page numbers in parentheses after the receipts refer to the page on which they appear in the pocket book.

For Human Medication

Charms

In the early nineteenth century magical cures were still employed, and the book contains two charms to prevent or cure toothache and one to stop the nose bleeding. Both the toothache charms are similar, and one was supposed to be effective merely by carrying a piece of paper on which the following words had been written:

> A Receipt for tooth ake
> as Petter (Peter) walked through the Street of Jerusalem jesus Saith unto him what ailieth thee Petter answered and Saith my Tooth doth ake Jesus answered and whomsoever keepeth these words in mind or writting Shall never be Troubled with Tooth ake this Lord I Believe amen. (page 33)

I imagine that this charm has been copied, probably many times, and that some words have been omitted after 'Jesus answered'.

The cure for a bleeding nose however did require the patient to take some action.

> Stop Bleeding at noase
> Take powder of Vitrol (Vitriol) on the balm (palm) of your hand let the blood Drop into the powder on your hand and then thro it into the fire and the blood will surely stop – immeadiatly - Safe Cure. (page 29)

Vitriol, per se, was green vitriol or ferrous sulphate, blue vitriol was copper sulphate and white was zinc sulphate. This treatment is reminiscent of Sir Kenelm Digby's 'Powder of Sympathy', a seventeenth century remedy which was powdered vitriol, usually said to be copper sulphate, but almost certainly ferrous sulphate.[3] This was dissolved in water, and immersing a piece of cloth soaked in blood from a wound in it was said to result in a cure.

Either of these cures might be worth trying before resorting to the one given by William Buchan in his *Domestic Medicine*, (first published in 1769).[4]

> If the genitals be immersed for some time in cold water, it will generally stop a bleeding at the nose. I have not known this fail.

A footnote in the 1820 edition of Reece's *Medical Guide*[5] observes:

> Charms were as much in use for the gout among the physicians of antiquity, as for any other disease; and perhaps, when we consider the periodical nature of the complaint, we may not entirely discredit their efficacy.

It is not clear whether Reece is referring to a spoken or written charm or to an amulet, but it is interesting that an M.D. of this period should still maintain some belief in their possible therapeutic value. It is also interesting to note that approximately five hundred years before this, a London quack was tried by a court of aldermen in 1382 for selling a parchment containing the words of a charm that invoked the body and blood of Christ against fevers. The judges said that putting a straw beneath his foot would have

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been just as effective, and ordered the charlatan to be paraded through the City as a warning to others.[6]

Of course not all the cures were magical and the manuscript contained many receipts that relied on chemicals or herbs for therapy, though some of them sound very strange to our ears.

Haemorrhoids

One remedy for this condition sounds distinctly unpleasant:

> For the Bloody Piles
> Chamber pott three quarter full of lant made very hott with fire and [sit] on it as hott as ever you Can Bear it – than go to bed. (page 17)

Lant was urine (usually stale).

A traditional Welsh remedy was to set fire to a tarred rope in a metal bucket and squat over it, but in this case it was probably the fumes of the burning tar that were thought to be effective rather than the heat.[7] An alternative was available for pipe smokers.

> A Receipt for piles.
> Take the Dust of Topaco (tobacco) out of the pipe after Smoking & hogs leard (lard) make it Ointment & anoint the part at Bedtime this remedy never fail. (page 28)

A similar remedy is to be found in the Countess of Kent's seventeenth century *A Choice Manuall, Or Rare and Select Secrets in Physick and Chyrurgery*:[8]

> For the Emeroids: Approved
> Take a piece of tawny cloth, burn it in a frying-pan to pouder, then beat it in a Morter as fine as may be, searce (sieve) it, then lay it on a brown paper, and with spittle make it plaister-wise, and lay it to the place, and trusse it up with clothes.

This cure is based on magic. The colour red was associated in humoral medicine with the blood, and it was believed that red medicines or dressings were effective in reducing inflammation; hence the stipulation that the cloth to be burnt should be tawny (reddish brown) in colour. It was also thought to be effective against evil spirits. Red flannel bandages, body belts and chest protectors were still on sale well into the twentieth century although, theoretically, white flannel would have been just as effective.[9]

Burnt cork was also used, but in a medicine to be taken internally:

> For the Bloody Piles —
> Cork burn in the fire then rub it small and take a good quantity in half a pint of ale luke warm three nights running at Bed time. (page 6)

Cramp

There is a remedy for the sharp localised pain which can occur after strenuous physical activity, a type of cramp usually known as a 'stitch':

> Receipt to Cure the Stitches
> get some goats blood and Dry it into powder and take Tea Spoonful and Swalow it Drink half pint warm ale after it. (pages 28-29)

To make Prepared Goat's Blood, blood from a middle-aged goat was put in an earthenware vessel, covered with a cloth and then placed in the sun to coagulate. Then the watery part was drained off, and the thick residue dried and powdered. In the seventeenth century it was used for a number of conditions,[10] but in the 1719 edition of Quincy's *Pharmacopoeia Officinalis & Extemporanea* we read that it 'is not at all known in common Prescription (sic), and is deservedly almost forgot.'[11] Obviously this was not the case with the writer of the receipt book.

Incontinence

> for a man that Cannot holds (hold his) water
> Take Tincture of Blistering Flies Balsam of Copaiba of each one Ounce mix from half a Tea spoonfull to a Tea spoonfull to be Taken night and morning in a glass of white Wine. (page 1)

This sounds rather drastic, but was probably more effective than Compound Comfrey Powder which had previously been said to be 'a well experimented, and almost infallible Secret, against involuntary Pissing a Bed'. This was made from the root of Red-flowered Comfrey, Mouse Flesh dried in an oven, Hog's Claw and Buck's Priapus.[12] The flesh of mice was used to treat a number of conditions, In Sussex when dried, powdered and mixed with jam it was believed to cure a child of bed-wetting.[13] I suppose that one could expect the penis of a deer to be used for urinary complaints. Pierre Pommet stated: 'The Powder or Filings of the Pizzle, given in Wine, is diuretick, and very good against Colick and dysentery'.[14]

Another unlikely remedy was Montagnana's Powder, prepared by powdering and mixing the dried inner skin of a cock's gizzard, burnt hedgehog and agrimony.[15]

Scurvy

Sailors were not the only people to suffer from scurvy at this period during which green vegetables, when eaten, were usually overcooked, destroying their vitamin C content.

> for Sqyrvy
> penny worth of Sweet Suplemeat (sublimate) mix with fresh Butter make it in ointment rub it well – safe. (page 3)

Sweet sublimate was a synonym for Calomel.[16] The treatment of scurvy is a good example of the reluctance to adopt new remedies at this time. In 1601 a fleet of five ships had set sail for the Spice Islands. South of the equator many sailors became ill, but a diarist on 'The Red Dragon', commanded by James Lancaster, noted that the crew of this ship did not succumb to the prevailing illness. He believed that this must be due to Lancaster insisting that every morning his men each drank three teaspoonfuls of lemon juice, of which he had brought several bottles.[17] In 1753 James Lind published his Treatise on the Scurvy but it was not until 1795 that the navy ordered lemon juice to be issued on its ships.[18] The receipt book clearly shows that, more than two hundred years after its daily use on 'The Red Dragon', this remedy had not yet become known to the general public.

Rheumatism

It comes as no surprise to find that there are several cures for rheumatism. One is a liniment with the following formula:

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a sure remedy to Cure the Reumitical Complaint
2 penny worth of Oil of Spike
2 Do Oil of worms
2 Do Oil St John wort
2 Do Oil Swallow
2 Do Oil of Petter
2 Do of Turpentine
This is a Sure remedy for the reumitivism By Rubing the place well. (pages 11-12)

Oil of Spike is Oil of Spike Lavender Oil. Oil of Earthworms was prepared by boiling them in olive oil and white wine until the wine had evaporated and then pressing the residue to obtain the oil.[19] Oil of Swallows was by this time substituted by Green Elder Oil. Oil of Peter (or Petre), also known as British Oil, was made by mixing twenty parts of Oil of Turpentine with one part of Barbadoes Tar.[20]

A remedy to be taken internally was:

for Rumatic Complain
Ston Brimston pwn (pound i.e. pounded) very Smal
Boil well put Brimston in a mug
Ston Brimston pwn very Smal Sping (spring) water Boil well put Brimston in mug let it remain 12 hours or fourteen whith (with) water on & then Drink Tea Cup full every morning Fasting – Don't boil the Brimston Tim (teem i.e. pour) the water on it in a mug. (page 2)

The directions here are confused, largely due to the author's wish to be explicit. A modern version, devoid of repetition, would read:

Crush some rock sulphur to a fine powder and place it in a mug. Boil some spring water, pour it over the sulphur and let it stand for twelve to fourteen hours. Drink a teacupful every morning while fasting.

Presumably, one drank the clear fluid above the sulphur, and added more boiling water to the residue in the bottom of the mug to prepare the next draught.

For Rumattical Complain
Take the young Sprouts of Holing (Holly) Tree and (put) them in Spring water till it is strong – and then drink three half a pint every Day for three Days Running – it will help. (page 6)

Another treatment involved taking pills as well as a draught.

A safe Cuare for Reumatical feaver or Complain –
Take of Tincture of guiacum Two Ounces a tea spoon full to be taken in warm water morning and at noon Daily –
Take of Opium half a Drachm antimonial Powder one Drachm to be formed into 40 pills with mucilage
Two to be taken Every night. (page 31)

Some of my customers in Derbyshire in the 1950s still used to take two drops of tincture of guiacum on a lump of sugar night and morning as a remedy for rheumatism.

Pain

for pain in a bone
gin and soap rub the please (place) well is a cure. (page 4)

This is a homemade version of Soap Liniment.

For Loose Teeth

To Fasten Teeth that is loose.
Best gun Powder made Small mixt with Vinigar and rub the gum well & he will gett fast" (page 38)

Gravel

Take for the gravel
Compound Powder of Ipicaintana 12 graines Nitre in powder 10 graines
made into a powder for one Does (dose) - to be taken every night and morning in Tea
Send 12 Doses

Same below in Latting
R Pulv Ipicac Comp gr xii
Nitriatis potass. gr x
12 gr pulv nocte maneque sum – in thea
Mitte xii. (page 51)

I can see no practical reason for repeating this prescription in Latin. Maybe the author was just 'showing off'.

Diarrhoea

This was a fairly common complaint.

Remedy for Loosness eitheir man or woman, the Bark of Blackthorn – Boil,d (boiled) in quart of sweet milk till it come to a Pint – then Put in it good quantity ginger, and good quantity nutmeg – take good quantity in the morning Daily. (page 48)

Note that in the contraction of 'boiled' the apostrophe is in subscript not superscript. Of the Black Thorn or Sloe Bush, Culpeper observed that: it 'helpeth to ease the Pains of the Sides, Bowels and Guts, that come by over-much scowering (sic), to drink the Decoction of the Bark of the Roots, or more usually the Decoction of the Berries, either fresh or dried.[21] When counter-prescribing for diarrhoea in the period 1950 to1970 I frequently added some tincture of buckthorn to kaolin and morphine mixture because of its astringent properties.

Worms

To kill the worms in Children
Warnet (walnut) leaves Dryed into small powder and Brownest Sugar well mixt Take it five morning Running. (page 49)

Culpeper noted that the older leaves 'are said to kill the broad Worms in the Belly or Stomach'. Presumably this referred to tapeworms as distinct from roundworms.[22]

Receipt for to Cure the worms
get Some Fearn (Fern) Roots and Dry them into powder and mix it with honey and Tea Spoon full night and morning - never fail (page 29)

I was still being asked for soft gelatin capsules containing extract of male fern made from the rhizome of *Aspidium filix-mas*, in the 1950s for the expulsion of tapeworms.

Amenorrhoea

a sure Remedy for woman when She has not her courses Reglar
2 oz of Carraway Seed
2 Do annis Seed
1 lb Currants
1 lb of Brown Sugar
2 penny worth Steel Fillings (filings)
1 glass of Brandy
Large Tea Spoonfull to be Taken night and morning. (p. 36)

This must have tasted better than the majority of emmenagogues.

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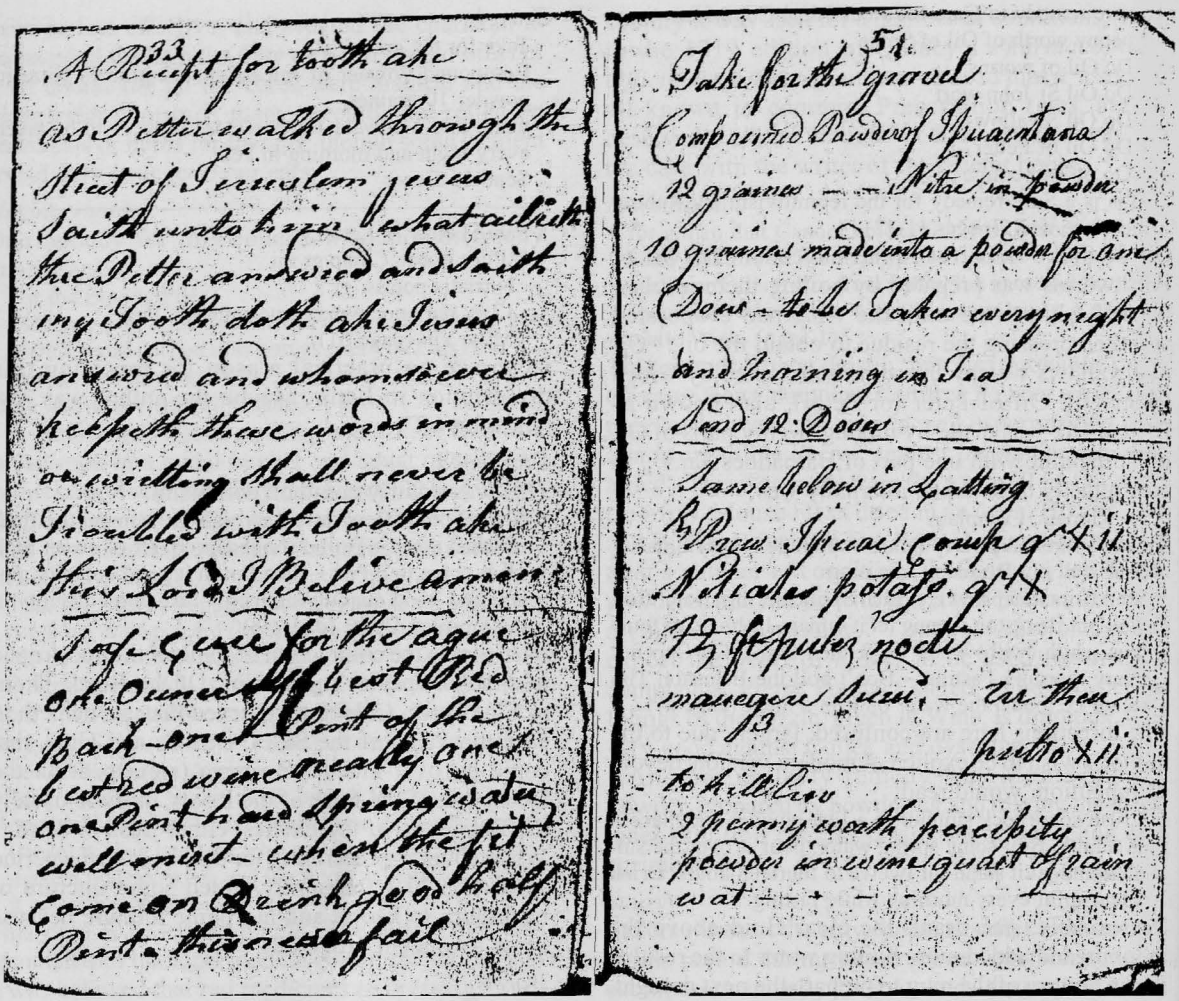

Two pages from the receipt book

A Cosmetic Wash

To Clean the Skine.

Take Agimony (agrimony) & Tansy steeped in Butter milk – and was (wash) your skin well in it will make it white. (page 15)

Itch

This was a common complaint in the nineteenth century when standards of hygiene were lower than today.

To Cure the itch at time whatever

Broom and fox gloves leaves well soked and Boiled in Old Lant and was (wash) the person well all over But (except) the privet part (private parts) this remedy never fail" (page 15)

Another remedy.

For the itch Safe Cure

One penny worth of white arsenic Boil in two quarts of spring water until is consum into (is reduced to) one quart – when it is near Done Boiling put in the water hand full of rough Salt then it is ready. (page 18)

I presume that this was a lotion for external application, but another remedy was intended for internal administration. This was a 'blood-purifyer' or laxative based on the traditional 'brimstone and treacle' that was still in regular use when I was young. It was used in most households in the 1920s and early 30s to 'clear out' the system in the spring. I remember one enterprising herbalist who sold treacle toffee that also contained a fair proportion of sulphur.

Safe Cure for the itch

2 Ounces flower Brimston

2 Ounces Creamatar (Cream of Tartar)

1 Ounce of ninetrol

2 penny worth sweet Oil (Almond Oil) 1 pennyworth of gallap (Jalap)

mix altogether in One pound of Treacle – take every night and morning two meat spoonfull – this never fail. (page 6)

I have been unable to find a satisfactory solution to the identity of 'ninetrol', but I believe that the most probable one is 'nitre' (potassium nitrate).

Shortness of Breath

The following receipt is dated 1822.

To Cure Shortness Breath

Take 25 claws (cloves) of garrick (garlic) & one pound of the very brownest sugar from the very Bottom of the Cask – Crush the garrick and put them in the Sugar and Boil it over Slow fire when Boiling Scum it with spoon then put the whole thro, rough linen cloth - - - then

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carry the same in your pocket to use any Time - - - Safe cure. (page 30)

My mother-in-law, whose family came from the Birmingham area, used to make a cough remedy by putting alternate layers of sliced onions and brown sugar in a basin, allowing it to stand overnight and draining off the resultant syrup. This recipe is also to be found in a book on Black Country food and life.[23]

Eye Lotions

Samuel Jones Eye water
1 penny worth white Vitrol 1 penny worth white sugar candy in quart Spring water
Let it stop (stand) fortnigh before is use. (page 35)

White vitriol is a synonym for Zinc Sulphate, which has astringent properties.

good water for the Eyes
get Saladin (celandine) and eyebright and Boil them in 4 quarts of water untill it consum into (is reduced to) two quarts and than Bottle it well and put in it some Brown Sugar and Dress the eyes well at Bed time and in the morning. (page 13)

Culpepper recommended the juice of celandine dropped into the eye, but suggested mixing it with a little breast milk to counter its sharpness.[24]

Lice

to kill lice
2 penny worth percipity powder in wine quart of rain water. (page 51)

Percipity powder would probably have been white precipitate (ammoniated mercury) though this is insoluble and was usually made into an ointment with lard and used for killing parasites. Presumably this was an external application, but anybody who was suffering from jaundice would not have advocated it being used too extensively or they might not have been able to obtain sufficient lice for the following remedy.

Jaundice

To cure the Jaundice
you take from 6 to 8 Lice from any person cloths (clothes i.e. body) or head Lice But the cloths Lice are best – take little flowr (flour) and Honey make in small pills put the Lice in the middle of the pills the (they) must be swallow whole – this never fail. (page 5)

I have not seen this recommended anywhere else, but an old West Sussex remedy was to roll a live spider in butter and swallow it, and in New England, USA a live spider was taken in a spoonful of molasses.[25] A recognised English treatment was to take the 'Volatile Salt, Oyl or Flegm' produced by distilling live millipedes (woodlice, sows or hog-lice),[26] though Quincy was of the opinion that of these only the Volatile Salt was of use.[27]

Salves and Healing Ointments

The book contains several recipes for salves, for example:

make healing Salve or to Desng (dressing) Shore (sore) leg
Take what lies next to the Tea Kettle out Side next to the copper pound it as small (as) possible and Stone Brimston all well pownd (pounded) Hog lard or fresh Butter well mixt. (page 7)

The material scraped from the outside of a copper vessel that had been heated on a fire would have been mainly verdigris (basic copper carbonate). This was the principal ingredient of Unguentum Egyptiacum, which also contained honey and vinegar. It was used to clean ulcers and wounds, remove proud and dead flesh, and then dry up the wound.[28]

Another formula was:

another good salve whatever
1 penny worth of Burgamy (Burgundy) Pitch – 1 do rossin (resin)
1 do Horse Turpentine
1 do of Venus (Venice) do
2 do Honey. 2 do Bee wax
ye white of 2 Egg – a Egg Shell full of flower (flour)
Boile over Slow fire than (then) must be powered (poured) into cold water and work the same as Cobler wax. (pp. 8-9)

Horse Turpentine, also known as Rough Turpentine, Resina pini, Terebinthina vulgaris and T. communis, was collected from *Pinus sylvestris* by cutting a hollow in the tree to collect the turpentine, and taking off the bark for about eighteen inches above it. Venice Turpentine is the fine clear part of Rough Turpentine that collects on the top by standing, or drains from the barrels exposed to the sun.[29] The use of an egg shell as a measure was not uncommon, particularly in country areas, and of course a 'cupful' is still encountered occasionally in cookery books.

Veterinary Formulae

The book contains a number of medicines for treating animals, a few of which are reproduced below.

The Fouls (Foul Foot)

To Cure a Cow of the Fouls -
Dress the place well with the Sprits of Salts and keep the Foot Dry for a little while – it is a Safe Cure never fails whatever. (page 19)

Foul, Loo or Low – applied indiscriminately to different types of foot lameness in cattle. Poulticing is usually recommended but it is not always practical, and always very troublesome.[30] Spirits of Salts (Commercial concentrated hydrochloric acid) sounds a rather drastic remedy, but I am often surprised at the ability of farm animals to withstand heroic treatment.

Black Water

To Cure Cow that makes Black water —
Take from 3 pint to Two quarts of her Own Milk. Take a pice (piece) of old Iron very rusty in the fire till very hot and put in the sweet milk and give it to Cow it is a Sure Cure. (page 30)

Retention of Placenta

To Make a Cow Clean
Take Sheeps Pluck, liver, Hart (heart), and lights – Cutt the same very small with a knive and put it in about Two Quart of warm Sweet milk give it with Horn - - never known to Fail. (page 32)

The horn is a 'drenching horn' – a hollow cow's horn used to administer medicine. I can find no parallel for this strange remedy.

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The Hask

To Cure Calf that gott the Hask
Tare (tar) and Fresh Butter made in good Ball and give it in horn full Salt and Lant – Safe Cure. (page50)

Hask is more commonly known as husk or hoose and is a dry cough caused by worms in the bronchial tubes. This formula had been crossed out and replaced by one in which "sutt" (soot) is mixed with the tar.

Summary

There are 97 remedies listed, including 11 veterinary ones. These numbers include several that are duplicates. The commonest types of medicament are salves or ointments, of which there are ten, but these ten do not include ointments for specific complaints such as haemorrhoids or scurvy. The most frequently found cures are for the itch (10), rheumatism (5), gravel (4), pain (4), and piles (3), all the others having only one or two entries. They were intended to treat 39 human complaints and 9 animal ones. In addition there were formulae for killing lice, making rat poison, and preparing damson wine!

The number of different medicaments that were used in the recipes was relatively small, but more than were to be found in the smaller sizes of domestic medicine cabinet. In 1820 Reece's *Traveller's Dispensary* that was flat and would fit in the pocket of a carriage, only contained ten drugs plus court plaster, lint, scales and weights with a book of directions and cost £3.10s.0d. (£3.50). The *Lady's Dispensary* which contained twenty medicines, including two pills, with some dispensing equipment and a book of directions cost £5.10s.0d. (£5.50). In all, he listed twenty different cabinets and a sea medicine chest ranging in price from £3.10s.0d. to £32.10s.0d. They included ones suitable for the family, country clergymen, and travellers on the continent and in the tropics.

In 1862 Savory and Moore stocked a range of sixty-seven different medicine chests and cases in rosewood, mahogany, walnut, boxwood and leather that were fitted with 'modern appliances and conveniences adapted for the requirements of families, clergymen, officers, owners of yachts, and travellers.' Unfortunately no prices are quoted.

I think that we can safely assume that the treatment received at the hands of Evan Jones was likely to be rather rough and ready when compared to the ministrations of a physician, surgeon, clergyman or local 'Lady Bountiful', but, nevertheless, must have been of great value to those who could not afford professional treatment.

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https://doi.org/10.24355/dbbs.084-201802141340

Horse Balls and Lethal Chambers: The Veterinary Chemist in Great Britain 1900 to 1948

Dr Stuart Anderson

For many years, community pharmacists in Great Britain have played an important part not only in human health but also in animal welfare. In the second half of the nineteenth century many pharmacists, particularly those in country districts, built up thriving businesses based on the preparation of animal medicines.[1] A wide range of such medicines was supplied, including drenches, salves, horse balls, suppositories, greases and ointments.[2]

A formulary in use in a West Yorkshire pharmacy between 1885 and 1927 included no fewer than seventy eight formulae for veterinary preparations, mainly for horses, but also for cows, sheep, pigs, dogs and hens.[3] The veterinary side of the business extended to the manufacture of groom's ancillary items, such as breeches paste, harness blacking, gig apron dressing, and boot-top dressing. Sometimes the business extended to manufacturing. Late in the nineteenth century a pharmacy in Tenterden, Kent, started manufacturing cattle food on a large scale.[4] This followed the substantial expansion of the veterinary side of the business by the owner, Stephen Willsher. 'Willsher's Cattle Food' was distributed throughout Kent and Sussex. The cattle food was later used as the basis for 'Horse Food', Poultry Food' (with added precipitated chalk), and 'Dog Food' (with added bone meal).

In the cities, however, it is clear that retail chemists did not have a monopoly on veterinary business. Roberts notes that in a pharmacy in the Belgravia district of London in 1900 there was little demand for animal medicines despite the fact that virtually all local transport was horse-drawn.[5] There were many other outlets. Indeed, the late nineteenth century was a period when individuals so inclined could gain basic qualifications in a number of occupations, and set themselves up in practice accordingly. In 1900, for example, one Alfred Lambert Smith APS, DDS, RSVL, was in practice at 37 Milk Street in Bristol, and advertised himself as a chemist, dentist and veterinary surgeon.6 Even when the value of a proper veterinary qualification became widely recognised, a range of practitioners continued to be involved in the care and treatment of animals.

Nevertheless, the growth of industrial pharmaceutical manufacturing during this period meant that retail chemists became less involved in the preparation of veterinary products themselves. They did, however, continue to be the principal suppliers of medicines for animals, particularly in country districts, and they also sold a wide range of heavily promoted commercial products, including sheep dips and horse balls, as these increasingly became available.

In both the towns and the country, the public still turned to them for advice regarding the health of domestic pets and animals, not least because it was a lot cheaper to go to the chemists' than to take the animal to a vet. For the public a particularly troublesome problem was what to do with a pet which was no longer wanted, or which was too sick to keep alive humanely. One answer was to take the animal to the chemists' to be put down. In the 1930s this was part and parcel of the veterinary chemist's daily routine. Indeed, veterinary work was such a part of the chemist's role that the *Chemist and Druggist* produced a book, 'written expressly for the drug trade', called *Veterinary Counter Practice*.[7] This was 'a concise survey of the most modern methods of veterinary medicine, including diseases and treatment' .The ninth edition was published in 1937. Under the heading 'killing dogs and cats, it reports that:

> There can be few chemists who are not called upon at some time or other to make an end of dogs and cats which have grown old and morose, dirty or dangerous, or in other ways offended against the unwritten code of laws which govern the conduct of domestic pets. The aim should always be to do it in a manner at once merciful, rapid, and safe to the operator .

There were by this stage a number of tried and tested methods available for the putting down of small animals, and also a number which were definitely not recommended. 'Strychnine should not be used to poison dogs: it is cruel, slow and uncertain. The lethal chamber is to be preferred'. Chloroform was the lethal agent of choice, although it needed to be used only with the right equipment. 'In no circumstances should chloroform be used as a lethal agent except in a box or chamber or strong close-fitting bag'.

The *Veterinary Counter Practice* helpfully suggests that 'any box or leather bag will answer the purpose', although 'more time will be occupied if much atmospheric air gains access than if nearly air-tight, as so-called lethal chambers should be made. ' The use of a number of possible designs is described. The 'hat-box' lethal chamber, illustrated in Figure 1, is an oval tin, fourteen inches long and ten inches deep, fitted with a padlock and key.

'Through the top a hole about two inches in diameter is cut, into which a stout cork covered with plaster skin is fitted. The animal is placed in the box, which is then securely padlocked, and a wad of absorbent cotton-wool saturated with chloroform is dropped through the opening in the lid, after which the bung is inserted'. No further instructions are given, but presumably the people carrying out the deed (usually the apprentices) went away for half an hour and hoped that when they returned the animal had succumbed.

Clearly the hat-box apparatus could only cope with

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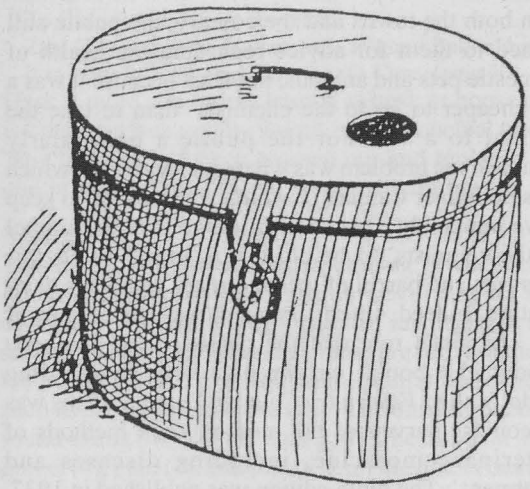

Figure. 1

the smallest of animals, and for bigger cats and dogs a larger piece of equipment was called for. This was the twin chambered box. Figure 2 illustrates one which was commercially available.

The box contains a movable partition between a small ante-chamber and a larger one into which the animal is first placed. *Veterinary Counter Practice* tells us that 'The small lid of the lesser compartment is then lifted and the chloroform-saturated sponge introduced. As the chloroform exudes through the perforated zinc between the chambers, the occupant of the larger compartment becomes drowsy without getting suspicious, and rarely makes any effort to escape. The window in the top of the box enables one to see when the subject is prone and insensible'.

The difficulty of knowing whether the exercise has been completely successful is fully recognised. To be on the safe side, it suggests that the subject 'may then be given the coup de grace with hydrocyanic acid, or the box should be kept closed until no doubt is left as to the death of the inmate'. It also notes that 'death by chloroform inhalation is accomplished in half the time if a dose of chloral is first given. Syrup of chloral per rectum is the easiest way to administer it'.

Further evidence for this activity came from the oral history of community pharmacy practice in Great Britain.[8] Ronald Benz, a retired pharmacist who was born in 1910, spent part of his childhood in the flat over his grandfather's pharmacy in Eastbourne, in East Sussex. He still remembers people bringing animals in to be put down. In about 1916, he recalls that at the back of the pharmacy his grandfather had a metal galvanised box, about two feet six inches long, about two feet wide and about two feet six inches high. It had a glass panel in the top, and a hinged lid. He remembers that 'the animal was put in, and the lid was put down. A small entry port was opened, the anaesthetic was put in first, and this was followed by hydrocyanic acid.[9] Lethal chambers of this sort appear to have been in widespread use in pharmacies until the late 1940s.

Basil Trasler remembers that the pharmacy in Liverpool where he spent much of his apprenticeship during the 1940s also had a lethal chamber for the destruction of small animals. He recalls that

> There was a notice on the glass of the front door of the shop, printed on green paper. It was an official sign of approval (by what authority I don't know) for undertaking the destruction of small domestic animals. The lethal chamber was kept in a cellar at the back of the shop. It was made of zinc coated metal, was about five foot six long by two foot six inches tall, and about the same wide. The whole of the top opened, in the form of a hinged lid. In the top of the lid there was a glass observation panel, about twelve inches by eighteen inches. At one end there was a metal slide which allowed a wide metal funnel to be inserted.

The usual arrangement was for the owner to discuss the problem with the chemist, and then to make an appointment to bring the animal in, once appropriate arrangements had been made. Basil Trasler continues:

> The usual procedure was that a customer would come into the shop, say 'could I bring my cat along to be destroyed?', and the boss would say, 'oh yes, bring it in tomorrow afternoon, and we will do it for you'. In practice, of course, the 'we' was always one, or sometimes both, of the apprentices.[10]

Getting the dose right was not an exact science, and even an apparently large amount of chloroform might not be sufficient. Basil Trasler recalls that

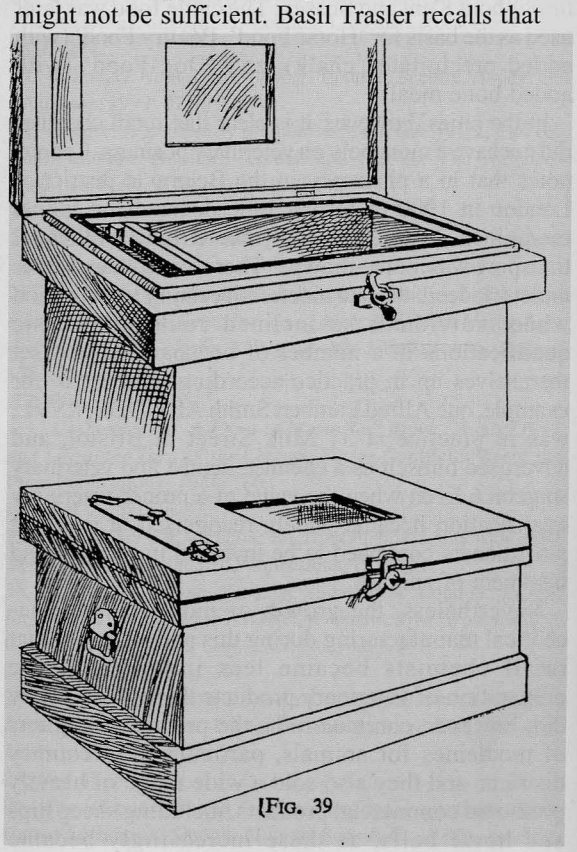

Figure. 2

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> On one occasion, we were dealing with a particularly large cat. After about half an hour we went down and saw that the animal appeared to be dead. We [the two apprentices] examined the animal through the glass, and saw that it was slumped down. We opened the lid, and there was just a streak of lightning. ... This animal leapt I don't know how high in the air. The cat leapt out in one leap, half way across the cellar, over a balcony, and dropped down to the yard below. By the time we two apprentices had followed it out we were just in time to see it about a quarter of a mile away going hell for leather down a nearby road!

The two apprentices concluded that there was nothing they could do about it, so they cleaned out the lethal chamber as usual, and the boss upstairs simply assumed that the job had been done!

Whilst the outward appearance of the animal was sometimes deceptive, clearer indications of inadequate dosage were sometimes apparent. Basil Trasler recalls that

> On another occasion we put in a large quantity of chloroform, because the animal concerned was a large Alsatian. We decided to leave it quite some time to take effect. In due course we went down to the cellar, and inspected the animal through the glass lid. All we could see ... and it scared us stiff ... were these great bared fangs, these two malevolent eyes looked up at us, and [the dog's] teeth were all exposed. It was still not only very much alive but also ready for a fight, and this was after half an hour inhaling chloroform fumes! We decided to call the boss in for this one, and as usual he took it in his stride. He just said 'give it more chloroform'. We must have poured in at least another pint of chloroform this time, and then we walked away. This time round we were more successful.

Once the animal was put down there was usually the problem of what to do with the carcass. Whilst arrangements existed for approval of premises where animals were put down, no such arrangements existed for the disposal of bodies. Basil Trasler recalls that

> We tried to get rid of them surreptitiously. The odd small cat or dog, we tried to lose in the general dustbin service. If we could, the boss tried to get the owner to collect the dead animal, and dispose of it themselves. One or two, of course, wished to do that in their own garden, but the majority didn't. Remember that people didn't have cars then, and to collect a dead animal wasn't that easy. Once they'd disposed of their former pet to us they walked away from it.

Some tact and discretion was required when writing out the bill for this service. Some years after the experience in his grandfather's pharmacy, as an apprentice with another pharmacist in the same town (Eastboume in about 1926), Ronald Benz was asked to help the other pharmacist in using the lethal chamber. He was given the task of pouring in the prussic acid. He recalls that

> After the animal was dead (it was a pet cat) I was told to write a bill for what I'd done. So I carefully wrote out the bill. 'To Mrs Smith, to killing one cat, two shillings and six pence'. The pharmacist in question looked at my handiwork with disgust, and then he addressed me sternly. 'Boy', he said. 'You do not write like that. What you have to write is 'To Mrs Smith, to lethargising one feline, two shillings and six pence'. That properly put me m my place.[11]

Although lethal chambers like this were available from early in the twentieth century it is clear that great expertise in dealing with small animals was achieved by a previous generation of chemists and druggists. Basil Trasler recalls an occasion slightly later in his career, when he was working as an 'improver' (someone who had completed their apprenticeship but had not yet undertaken the studies and taken the examinations to qualify as a pharmacist) in a retail pharmacy in Northampton in 1946.

> I remember a customer wanted a dog destroyed. The dog in question turned out to be a black Scottie. The premised concerned didn't have anything in the nature of a lethal chamber, or a seal of approval for its use, like the earlier one. It was a long established business and the destruction of animals had been undertaken there for many years.[12]

Basil Trasler remembers that on this occasion the elderly pharmacist said, 'yes, we will do that', and the animal was duly brought in. He describes what happened next:

> The little Scottie was sat on its haunches on a workbench in the dispensary. The old gentleman pharmacist took a little glass stoppered dropper bottle, a ribbed poison one. It apparently contained Scheele's hydrocyanic acid [stronger hydrocyanic acid BPC 1934, an aqueous solution containing four per cent of hydrogen cyanide]. He held this in his right hand, controlling the glass stopper between his first and second fingers. He then spoke to the dog, which looked him in the eyes, turning his face towards him. The pharmacist dextrously flicked a drop of this acid straight into the dog's eye, and the dog fell dead virtually instantaneously.[13]

Basil Trasler recalls that he had never seen this done before, or even heard of it being done before, and he never saw it done again throughout the course of his long career. He nevertheless recalled the incident vividly. He also remembers that one of the other pharmacists in the establishment objected so much that this was the last time it was carried out in that particular pharmacy. As he says 'it was certainly quick and effective, and almost unbelievable'.[14]

In fact, *The Chemist's Veterinary Handbook* of 1955[15] tells us that 'hydrocyanic acid has long been used as a lethal agent for cats and dogs, but it is not a merciful poison, although it is certainly effective and rapid.' It suggests that the four per cent solution (Scheele's solution) should normally be used. 'The acid can be conveniently introduced into the rectum with a syringe' ... The poison can, of course, be given by mouth if preferred, and it is only necessary to insert the liquid inside the cheek without forcing the jaws apart. The animal quickly passes into a state of tetany, and death from asphyxia occurs in about half a minute.

https://doi.org/10.24355/dbbs.084-201802141340

The Veterinary Surgeons Act of 1948 further restricted the list of unqualified persons who could carry out veterinary activities, and the range of procedures they could perform, with effect from 30 July 1949. As a result, the arrangement by which small animals could be put down at the chemists in this way came to an abrupt end.

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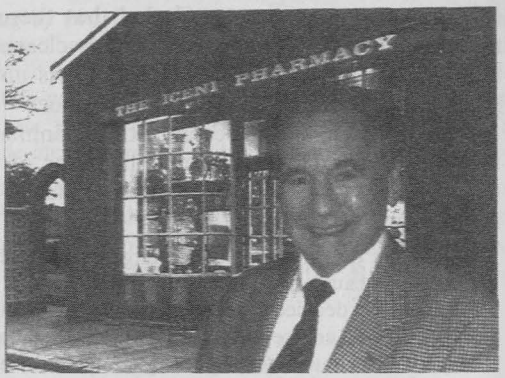
Review

A Pharmacist's Tale

John Newstead. Wymondham, Norfolk: John Nickalls Publications, 2003, pp. 104. (ISBN 1-904136-10-9). Available from bookshops at £9.99 or direct from the author (John Newstead, 28 Ringland Road, Taverham, Norwich, Norfolk NR8 6TG) price £11.49 inc. post and packing.

This is a true story of one man's dream, his twenty-five year struggle, and final success in achieving it.



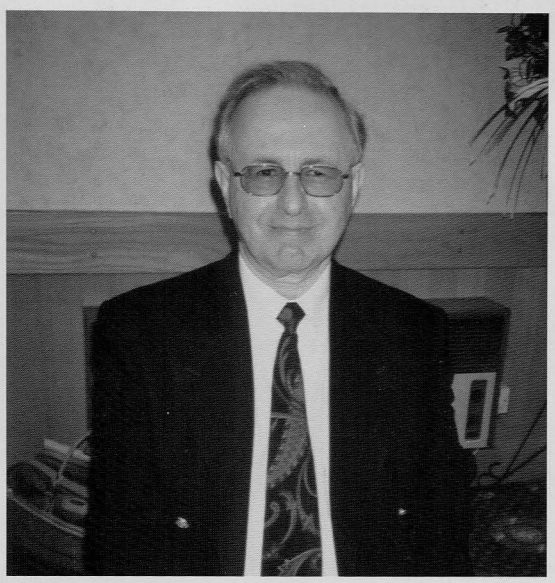
John Newstead's aim was to collect and preserve the artefacts that were connected with East Anglian pharmacies, particularly those dating from the nineteenth and early twentieth centuries. The object was to establish a collection that was as complete as possible, where ephemera were as important as the rare and valuable items used for storage and dispensing, and in which the provenance of every object was recorded. This project was completed in 1985, and all pharmaceutical historians owe him an immense debt of gratitude because it is now too late for anybody else to attempt a similar exercise. The collection is now housed in the Bridewell Museum, Norwich.

His narrative deals with the adventures, accidents, disappointments and triumphs that occurred during the process of amassing this vast hoard of irreplaceable, historically important articles. Although it does not set out to be an antique collectors' guide, it will prove to be very valuable to those interested in pharmaceutical bygones. It is printed on good quality paper, well illustrated with coloured and black and white photographs of containers, dispensing equipment, chemists' sundries, advertising material, labels, pages from catalogues, fixtures and fittings, as well as interior and exterior views of a number of Norfolk pharmacies.

Unfortunately there is no index, as this would have increased the value of the book as a reference tool, but altogether it is a fascinating record of the times which a few of us can still remember. I think that the book is excellent value for money, and deserves a place on the shelves of anyone with an interest in retail pharmacy.

W. A. Jackson

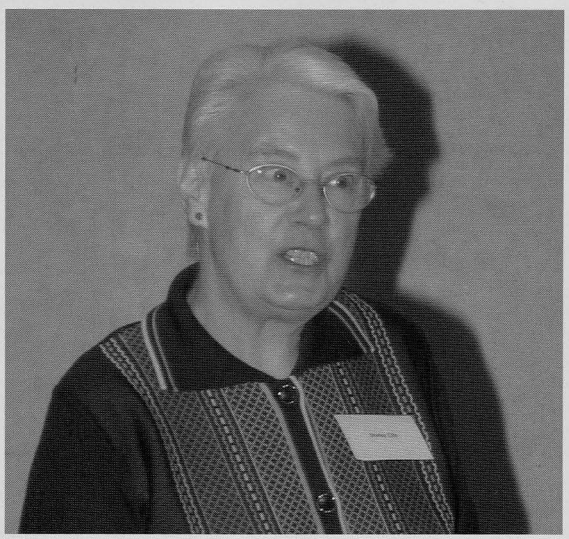
https://doi.org/10.24355/dbbs.084-201802141340



ProfessorVirginia Berridge, who gave the Foundation Lecture: Intoxicating Vapours: Opium, Cannabis and Tobacco in 19th and 20th century Britain, on 12 March 2003, with Dr Stuart Anderson.

At the BSHP Spring Conference in Edinburgh, April 2003

Dr Walter Sneader, who spoke on the history of the discovery of aspirin (*above right*);
Dr Shirley Ellis, who spoke on the Pharmaceutical Register as a Family and local history resource (*right*);
Dr Peter Worling and friends playing at the stramash (*below right*);
and Professor Henri Silberman, Dr Annette Bierman and Mrs Monique Silberman (*below*).



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Postcards and greetings cards from the Museum

Two of the range of 24 postcards and 4 greetings cards on sale on behalf of the Museum from the Library issue desk at 1 Lambeth High Street. All the cards show images or objects from the Museum's fine collections.
The examples on this page are reproduced with permission.

Left: Ada Richardson who qualified as a Chemist and Druggist in 1906 and worked in Leicester.

Below: 'The Chemist's, Wigmore Street'. Rouse's premises painted in 1953 by John Cole.

 ISSN: 0079-1393

Typeset and Produced by Ralph Allen Press Ltd, Bath BA1 1UT
https://doi.org/10.24355/dbbs.084-201802141340

PHARMACEUTICAL HISTORIAN

Vol. 33 No.3
September 2003

British Society for the History of Pharmacy
840 Melton Road, Thurmaston, LEICESTER LE4 8BN

Founded 1967

https://doi.org/10.24355/dbbs.084-201802141340

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Editor: Ainley Wade, BPharm, MPhil, FRPharmS
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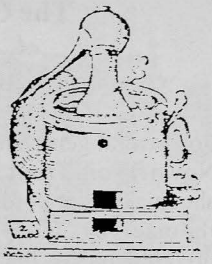

Contents

Diary

Saturday 20 September
The Museum of the Royal Pharmaceutical Society is taking part in this year's London Open House weekend by providing guided tours of the Society's headquarters and the museum displays.

Thursday 13 November 2003
Joint Meeting with Society of Apothecaries *at Blackfriars Lane, London*. 'From Dioscorides to Derek Dunlop: developing quality standards for medicines' by Dr Michael Jepson.

Wednesday 4 February 2004
Kevin Brown, Curator of the Alexander Fleming Museum, will speak on an aspect of the history of Penicillin.

International Society for the History of Pharmacy
The next meeting of the International Society for the History of Pharmacy will be the **36th International Congress,** organised by the Romanian Society for the History of Pharmacy in Sinaia, north of Bucharest, Romania on 24-27 September, 2003. Details can be obtained from the BSHP secretary or from the International Society website at **www.histpharm.org**

Advance notice

Members are advised that the **37th International Congress** of the International Society for the History of Pharmacy will be organised by theBritish Society for the History of Pharmacy and is planned for late **June 2005** in Edinburgh.

Obituaries

A.G. Mervyn Madge of Plymouth, a former President of BSHP, died on 21 June 2003. He presented several papers to annual spring conferences, served as a committee member until recently and was President in 1984 and 1985. He was well known in many pharmaceutical organisations and had been a member of the Council of the Pharmaceutical Society for 15 years and an Honorary Auditor for 15 years, in addition to many other posts.

Members will be saddened to learn that **Hazel Hunt**, wife of ex-president Dr John Hunt, died on 13 July after a short illness. Although not a pharmacist, Hazel was a great supporter of BSHP and well known to those attending the annual spring conferences, assisting John as conference organiser by welcoming members and helping those going on local visits.
Hazel had a lively sense of humour and when asked by visitors who spotted pharmaceutical bygones on her shelves whether she was interested in pharmaceutical antiques would reply "I have to be, I'm married to one".

The **Museum of the Royal Pharmaceutical Society of Great Britain** has launched two new information sheets explaining the Society's motto and its Coat of Arms. *The Society's Coat of Arms* sheet explains its history, gives a full explanation of its symbolism and brief details of its supporters, Avicenna and Galen. See picture on back cover.
The Society's Motto sheet gives full details and a translation of the motto, *habenda ratio valetudinis* (loosely translated as, "we must pay attention to our health"), which originates from the writings of Cicero in *De Senectute*, a dissertation on old age. Briony Hudson, the Society's keeper of the museum collections, said that the sheets had been prepared because the arms and motto were a frequent source of enquiries.
Both information sheets are available on the Society's website (www.rpsgb.org.uk/museum) as PDF documents and can also be requested by contacting the museum on 020 7572 2210 or by email on museum@rpsgb.org.uk.

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The Caparn Family

Dr J. Burnby

For several generation, at least three, the Caparns of Newark-on-Trent, Nottinghamshire had been shoemakers, or cordwainers as they preferred to call themselves. They also had an extraordinary predilection for the Christian names of Daniel and William.

Daniel Caparn I (1584–1630) married a Dorothy Tailor in February 1614. They had at least four children but all died young with the exception of William I, who in his turn married a Mary Bristow.[1] William and Mary's family was small as they had but two years of married life together and the one child Daniel II (1641–1686). This Daniel married an Elizabeth Cook in about 1667 when she was twenty.[2]

The family then changed its occupation, Daniel III (1678-1754) becoming a baker, which obviously suited him, because unlike his forebears he lived to be 76. Of his family, Daniel IV (1719–1788) married twice, firstly to Faith Ealand by whom he had three children, and secondly to a Mrs Sarah Coats by whom he had but one child who took Holy Orders. However we are not concerned with this branch of the family, for their bent was not in pharmacy, but with those of William III (baptised 1724), the son of Daniel III, it was quite another matter and it is with those that we are concerned.

William's son, Daniel V, became a baker like his grandfather Daniel III and married a Jane Quipp (1755–1819). By her he had quite a large family for those days, including the inevitable Daniel VI and William VI. The latter was apprenticed to William Barton of Horncastle, Lincolnshire, a chemist and druggist in that town in July 1792.[3] He does not seem to have been in the Horncastle pharmacy for long but was replaced by his younger brother John II. In John's case no money was exchanged for an apprenticeship. At some unspecified point the Barton and Caparn interests were amalgamated, possibly at the time of their move in March 1815. Then occurred the event of John's marriage to Sarah Hare[4] by whom he had no less than thirteen children.

Like his father William III, William IV (baptised February 1755) also became a maltster, an occupation that could make a sizeable amount of money. He married an Anne Colby at Southwell in May 1779. His brother John I (1763–1808) had an altogether different career. John became a postmaster and a schoolmaster in 1796 at Christ's Hospital School in Lincoln, and his wife the matron. At that time the Lincoln Post Office was situated 'a few paces above the Stone Bow, facing Silver Street, and for the accommodation of the inhabitants residing "above hill"' so that the two posts could easily be run together.'[6]

The Stonebow, Lincoln, with the Guildhall above

John Caparn, described as a schoolmaster, joined the Witham Lodge of Freemasons in 1796, and was Master in 1798 and 1799.[7] John I and Mary had but the three children: Jane (who married her Caparn cousin Robert); John II; and William who was hydrocephalous and died when only eleven, so that all his parents' hopes must have been placed with John II.

The first to leave home was William VI in 1792, the son of the baker in Lincoln; second was Thomas in 1795 in Newark; and third was John III in 1799, who went to Boston.[8] It would seem that pharmacy was considered 'a good thing' towards the end of the eighteenth century.

William and John Caparn of Horncastle

William Caparn, the oldest of the four cousins who entered pharmacy, was apprenticed to a William Barton of Horncastle from July 1792, when he was only twelve or thirteen, but he had many brothers treading on his heels. Although a comparatively small town, Horncastle probably had the largest horse-fair in England during which three weeks in the year its streets were jammed with horses.

Besides the horse fair, sheep and cattle were bought at the many Wold fairs which were held not far away, sheepskins becoming a speciality of the Horncastle glovers. There was also growth of trade on the navigable rivers, even on Horncastle's small River Bain, so life was by no means in a backwater.

At some point not specified the Barton and Caparn interests were amalgamated, and John II joined his cousin William in the business. Advertisements appeared in the local paper, *The Lincoln & Stamford Mercury*, (said to be the oldest provincial newspaper in England) under the names of Barton & Caparn; probably John had some informal arrangement with his cousin and no money was exchanged. Then the great event of John's marriage to Sarah Hare took place.[9]

In April 1811 they placed the following advertisement:

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Barton & Caparn, chemists & druggists of Horncastle offer Schweppe's soda water at 9s.6d. per dozen pints or 6s.6d. per dozen half-pints duty included.

In July 1813 they had fresh stocks and were advertising again; and also that they had

a large assortment of Paints, Oils & Colours of a superior quality which they are determined to sell at the lowest terms.[10]

In March 1815 they informed the public that

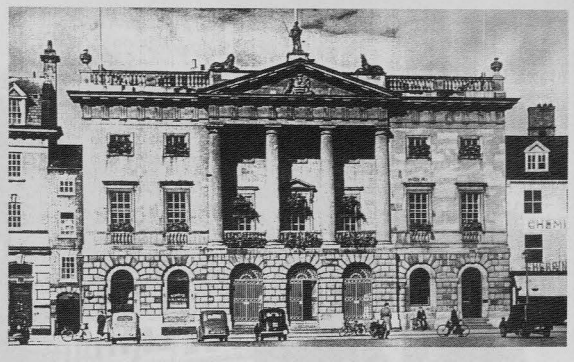
Barton & Caparn, chemists & druggists, oil & colour men, Horncastle, have removed to the premises lately occupied by Mr Bell.

In February 1817 they were offering

fine linseed, suitable for sowing, also linseed & linseed cakes for cattle.

In November 1811 John Caparn gave two guineas, followed by a guinea a year towards the cost of a National School at Horncastle.[12] At the same time he became a member of the Horncastle Association for the Prosecution of Felons and remained with them for some twenty years.[13] In 1820 the feoffees of St. Swithin's, Lincoln demised to him a house with a small piece of land. Five years later he became one of the trustees to the estates of Hurstcroft's and Snowden's Charities.

The Horncastle Charities report of about 1836 noted, 'a large house in High Street near the Bull Inn was occupied by Mr John Caparn.' Some five years earlier he had owned and occupied a house in the High Street, formerly called the Cross Keys.[14]



The Town Hall, Newark on Trent

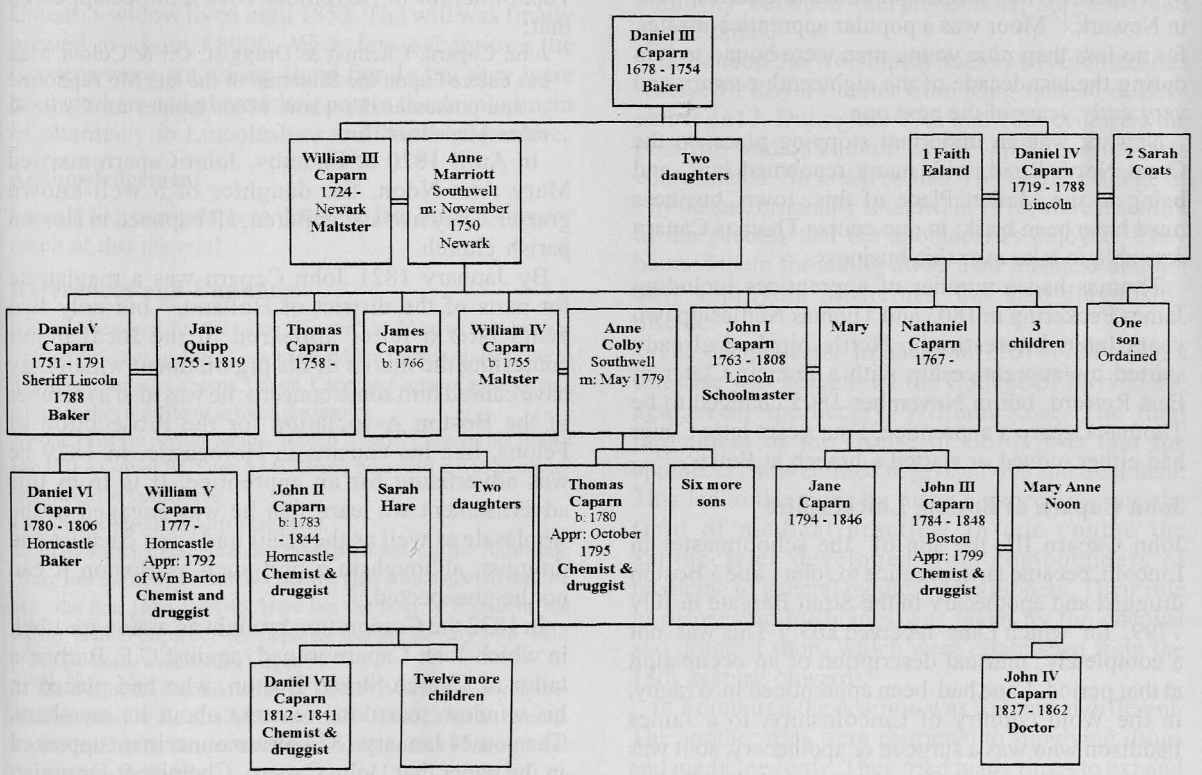
White's 1826 *Directory of Lincolnshire* shows him to be the agent for the County Fire Office, and in 1842 the business held a similar position. In 1826 John Caparn took a new partner so that it was now known as Caparn & Marfleet.

For some years his eldest son Daniel VII had been a partner in the business, and in 1839 John II retired. First of all, he went to West Ashby, and then to Winthorpe not far from his Newark relatives; there he died in October 1844 aged 61.

Happily his son Daniel VII was able to carry on his father's business for we have the following notification:

Daniel Caparn, chemist & druggist, Horncastle, acknowledges the favours conferred on him during his partnership

Descendants of Daniel Caparn III



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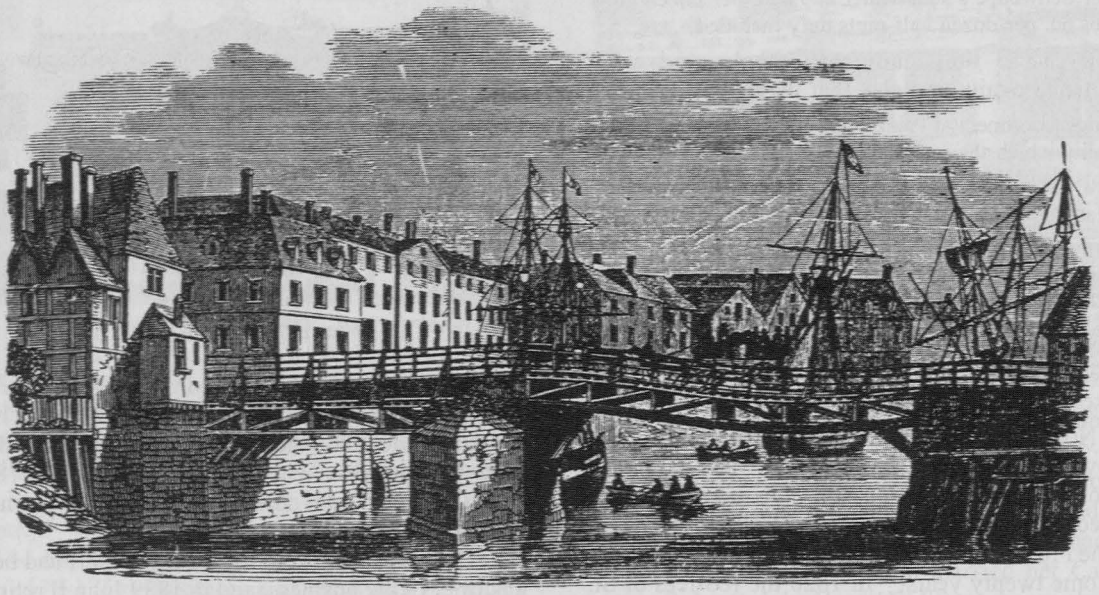

The town bridge at Boston at the end of the eighteenth century

with his father, and informs his friends the business will be conducted in the same manner as before.

However this arrangement lasted only a year or so for Daniel VII died himself in 1841, outliving his father by three years. By 1839 the pharmacy had been taken over by W.P. Carlton who kept it until 1937.

Thomas Caparn of Newark-on-Trent

On the first of October 1795, Thomas Caparn, son of William IV was bound apprentice to Charles Moor in Newark.[16] Moor was a popular apprentice-master, for no less than nine young men were bound to him during the last decade of the eighteenth century and very early years of the next one.

Newark was an important stopping place on the Great North Road, with many renowned inns, and being in the Market Place of this town, business must have been brisk; in due course Thomas Caparn was able to take over this business.

Thomas had a number of apprentices including James Peckering in 1803 and Thomas Nettleship two years later. Interestingly, Nettleship had already started his apprenticeship with a Francis Clater of East Retford, but in November 1805 changed to be Thomas Caparn's apprentice. Four years later Clater had either moved or started a branch at Bawtry.[17]

John Caparn of Boston, Lincolnshire

John Caparn III, the son of the schoolmaster in Lincoln, became an apprentice to John Lane a Boston druggist and apothecary in the Strait Bargate in July 1799, for which Lane received £63.[18] This was not a completely unusual description of an occupation at that period. Lane had been apprenticed in Wragby, in the Wold country of Lincolnshire, to a James Paddison who was a surgeon & apothecary, so it was perhaps not totally inaccurate.

Only a few years earlier John Flinders (younger brother of Matthew, the first to circumnavigate Australia) had been apprenticed to a Mr Tupholme of Wide Bargate nearby, but in the words of his father his behaviour was so 'unexampled' that he had to be removed and spent the remainder of his life in a York mental hospital. This must have caused a considerable stir in the area and proved too much for Mr Tupholme, for in November 1818 a notice appeared that:

> John Caparn, Chemist & Druggist, Oil & Colour Man has entered upon the Situation of the late Mr Tupholme ... and possesses the whole of his recipes for Cattle & other Medicines.[19]

In April 1820 at Enderby, John Caparn married Mary Ann Noon, the daughter of a well-known grazier. They had six children, all baptised in Boston parish church.

By January 1821 John Caparn was a magistrate for parts of the district of Holland,[21] but only two years later a letter appeared in the local paper contesting the merits of his pig ointment which may have caused him some concern; he was also a member of the Boston Association for the Prosecution of Felons, like his cousins in Horncastle. In 1829 he was advertising for an apprentice. It is from this advertisement we learn that he was engaged in the wholesale as well as the retail trade as a chemist and druggist, although in a port such as Boston it can not be unexpected.[22]

In 1832 the Corporation brought an action for libel, in which John Caparn joined, against C.F. Barber, a tailor of Church Street, Boston, who had placed in his window scurrilous remarks about its members. Then on 24 January 1834 an announcement appeared in the paper that 'John Caparn, Chemist & Druggist,

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Oil & Colour Man had disposed of his business in Strait Bargate, Boston to a Mr Proctor.'[23]

Some details of his later life may be gathered from a sworn statement made by his widow. This shows that he stayed in Boston until June 1835 and then moved to Ironville, Derbyshire where his two elder sons died, one in October 1840 and the other in May 1841. Not surprisingly, he then moved to Arundel, Sussex, where he died in 1848.

His youngest and only surviving son, John IV (1827-1862), aged 23 became a 'dispensing assistant' to James Lacy, a general practitioner in Castlegate, Newark-on-Trent, but finally qualified as a doctor from Guy's Hospital in October 1856. He then mortgaged the property he had inherited from the Reverend John Caparn and went out to India for two or three years. On his return he married a Sarah Marriott (possibly a distant relative) at Nottingham and were soon the parents of a girl and a boy, but tragedy continued to haunt the family and John IV died at 34, and his only son soon afterwards.

The biggest surprise to this family of cousins must have occurred with the deaths of first the Reverend John Caparn in 1834 and then of his wife in 1853. To his wife he had bequeathed property in Morton and Handthorpe for life, and then it was to pass to John Caparn the druggist of Boston, but should he predecease him (which in fact he did in 1848) then the property was to pass to John's II's eldest son, which proved to be the doctor noted above.

John Caparn of Horncastle was to receive £1000 but can never have done so as the Reverend John Caparn's widow lived until 1853. The will was finally proved at about £8000. With few exceptions the Caparns were not a long-lived family but they were hard workers and played their part in the development of pharmacy in Lincolnshire and Nottinghamshire.

Acknowledgement

I would like particularly to thank the late Mr R. Drury for much of this material.

References and Endnotes

It should be noted that the name 'Caparn' could be written in a variety of different spellings, such as Caybarn (which gives a clue to its pronunciation), Caborne, Capon, Caperne, Capne, Capporne etc., which makes it difficult to trace the family.

A book exists in private hands, headed 'Daniel Caparne his Booke 1662' [i.e.Daniel II]. Seen by R. Drury who said it was in agreement with the family tree.

1. Newark-on-Trent parish registers.
2. In Newark parish church is a brass plate bearing the following: 'Here lies the body of Daniel Caperne [III] who departed this life May the first 1686 aged 45. Here lies the body of Elizabeth, the wife of Daniel Caparne, who departed this life January 16th. 1712 [1713 by today's reckoning], aged 57.'
3. He was of the second family of Daniel IV and the only immediate member of the family to take Holy Orders; after he became a wealthy man he bequeathed very sizeable sums of money and property to his family.
4. *Lincoln and Stamford Mercury,* William Capern married Anne Marriott on 22 November 1750 at Newark.
5. Daniel V (baptised 26 October 1751, died 1791) went to Lincoln where he was a baker. In his will he mentions both John I and William IV and asks them to look after his wife and four children.
6. Stark's *History of Lincoln,* 1810, p. 296.
7. Dixon's *History of Freemasonry in Lincolnshire.* pp. 184, 182.
8. Wallis & Wallis. *18th century Medics*, PHIBB, pp. 97, 100.
9. *Lincoln & Stamford Mercury.* The marriage of John Caparn to Sarah Hare on 13 July 1810.
10. ibid. 12 April 1811, p. 3.
11. ibid. 19 November 1813, p. 2.
12. ibid. 1 September 1815, p. 1.
13. ibid. November 1827.
14. Charity Commissioners' Report, pp. 392, 642, 634, 643.
15. He was the owner of a house in Thorngate, Lincoln.
16. *Lincoln and Stamford Mercury.* 7 June 1839, p. 3.
17. *Lincolnshire Chronicle.* 26 November 1841, p. 3.
18. *Lincoln and Stamford Mercury.* 8 July 1814, p. 3.
19. ibid. 13 November 1818, p. 3.
20. *Doncaster, Nottingham & Lincoln Gazette.* 8 July 1820, p. .3.
21. *Lincoln and Stamford Mercury.* 12 January 1821, p. 2.
22. ibid. 10 December 1824, p. 3.
23. Lincolnshire Archives, Whit III Morton 1/17.
24. Lincolnshire.Archives, Whit III Morton 1/15.
25. Newark 1851 Census.

The Edinburgh Apothecaries

Dr Peter M Worling

The early history of the medical services in Great Britain is of a constant jockeying for position and authority between the physicians, surgeons and apothecaries.

In London the Worshipful Society of Apothecaries received a Royal Charter from King James I in December 1617. During the 17th and 18th centuries the position and influence of the apothecaries was consolidated. So much so that The Royal College of Physicians, originally founded in 1518, were resentful of the success that the apothecaries enjoyed. They blamed them for taking away their business and not only supplying medicines, but also diagnosing disease.

The dispute came to ahead in 1701–1704 when a test case was brought by the College of Physicians, against an apothecary, William Rose. The final judgement of the House of Lords was that the apothecary was entitled to give advice and treatment. This led to the move by many apothecaries into the field of medical practice. In due course the apothecaries developed from compounders of medicine to general medical practitioners. Their role in dispensing medicines was taken by the chemist and druggist shops which were established from the 18th century onwards.[2]

In Edinburgh the position was somewhat different. The apothecaries were restricted to supplying drugs and medicines only. They tried many times to expand

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their influence and increase their role by being willing to diagnose and prescribe, as well as supply medicines, but they were held in check by the physicians and the surgeons who were active in protecting their own interests and their sphere of work, from any encroachment by the apothecaries. These attempts by the apothecaries led to them being mistrusted by the physicians. This mistrust was increased by the victimisation of Scottish trained doctors by the Society of Apothecaries in England, although by the 1730s the two roles of dispensing and prescribing were beginning to be seen as separate.[4]

Early development of medicine in Edinburgh

During the Middle Ages surgery was carried out by both the surgeons and the barbers. The barbers were established in 1092 as a result of the monks being forbidden to wear beards and as a result some of the monks trained in shaving and in bleeding. By the 13th century there were two clearly recognised groups. The surgeons of the long robe, the barber-surgeons and the surgeons of the short robe, the lay barbers.

There was a considerable overlap between these two crafts but a Royal decree was published which forbade the lay barbers from practising surgery unless they had been examined by the brothers of the long robe. This separation of the crafts was further strengthened in 1368 when the master surgeons formed a separate guild and in 1462 when the barbers were granted a charter by Edward IV which restricted them to blood letting and the healing ofwounds.[1] In Edinburgh by contrast, the surgeons and the barbers continued their close relationship and in 1505 they jointly petitioned the Town Council of Edinburgh to be enrolled as an Incorporated Craft of the Burgh.

In their petition the members undertook to be responsible for the proper education of craft members.

> Thatt no maner of persoun occupie nor use any poyntis of oure saidis craftis of Surregerie or barbour craft within this burgh bott gif he be first frieman and burges of the samyn and that he be worthy and expert in all poyntis belangand the saidis craftis deligentlie and avysitlie examinit and admittit be the maisteris of the said craft for the honorabil serung of oure Soverane Lord his lieges and nychtbouris of this burgh. And als That everie man that is to be maid frieman and maister amangis ws be examit and previt in thir poyntis following THATT IS TO SAY That he knaw anotamea nature and complexion of every member In manis bodie. And in lykewayes he knaw all the vaynis of the samyn that the mak flewbothomea in dew tyme. And als that he knaw in quhilk member the signe hes domination for the time for every man aucht to knaw the nature and substance of every thing that he wirkis or ellis he is negligent.

The 'Seal of Cause' was granted on the 1st July 1505. This united the surgeons and the barbers as one of the Crafts of the Burgh. Incorporation was an important step, not just because it established a monopoly for the members of the craft, but because it also gave the members, by an Act of Parliament of 1469, the right to take part in the election of magistrates and consequently influence local Government.

The early Town Councils were largely self elected and were made up entirely of merchants. The merchants through the formation of the Merchants Guild in Edinburgh controlled the local government. The crafts through their Incorporations, were anxious to break this monopoly and to bring their influence to bear on local government, previously the prerogative of the Guilds. The Barber-Surgeons after they were incorporated, petitioned the Town Council to allow more representatives of the crafts to join the Council, but this does not appear to have been successful.

Apothecaries

Generally the relationship between the apothecaries and the other branches of medicine did not cause any problems, despite the fact that the medical profession guarded their monopolies with vigour. No doubt there were differences; in 1575 the Surgeons made a general complaint that the apothecaries

> daillie visit and exercisit yt sayd craft (surgery) they nather being friemen their of nor previligt thr to.[3]

There were probably other complaints but the apothecaries seem to have lived peacefully with the other crafts. One reason was that they were few in number, possibly no more than eight.

A more serious dispute arose in 1643 concerning the division of responsibility between the surgeons and the apothecaries. The Town Council convened a meeting of the two parties at which they agreed that the application of sear cloths to dead bodies, all manual applications about dead or living bodies and the curing of diseases such as tumours, wounds, ulcers, luxations, fractures and the curing of virolls should be restricted to the surgeons; the administration of medicines inwardly was the only liberty of the apothecary. This agreement was made an Act of the Town Council.[1]

Barber-Surgeons

The Incorporation of Barber-Surgeons was made up of the two crafts, barbers and surgeons. Before incorporation the barbers had carried out some surgery, but after this time they had to pass an examination in anatomy before they could do so. All barbers were eligible to become surgeons after they had passed this examination. In 1588 an act was passed forming a second class of barbers, the 'simple barbers'. They were only permitted to shave and cut hair. This regulation remained in force until 1650 when it was repealed. During this period, only eight were admitted as simple barbers.[7] There was little interest in being admitted as a barber when the more lucrative craft of barber surgeon was open to them.

A great deal of time and effort was expended in

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protecting the rights of the Barber-Surgeons. One subject in constant dispute was the area over which they could exercise jurisdiction. The Incorporation controlled the craft in the city of Edinburgh, but this did not extend to the adjoining areas of Leith, Portsburgh (now the Grassmarket), or the Canongate. In 1636 the Canongate became part of the city and this brought the barbers of the Canongate under the control of the Barber-Surgeons. Up to this time they were free traders and they could not see any point in paying fees to a Society from which they did not derive a benefit.

In 1641 the Town Council tried to regulate the position by passing an act which stated:

> that in the matter of Chirurgie the inhabitants of the suburbs should be provided with skilful and honest men and not left to the arbitrament and imposter of women and ignorants.

Little was done; the Baillies of the Canongate were summoned in front of the Lord Provost and Council in 1650 and told to support the Deacon of the Surgeons in his efforts to regularise the position. The barbers were then brought before the Court in Edinburgh and told they could not carry out their trade without a licence. This was thought to have solved the problem as a number of barbers agreed to join the Incorporation and pay their fees.

This respite was only temporary. After Cromwell's forces occupied the City in 1651 a Canongate barber named Priest, who was known to the English garrison, decided without authority to open a shop within the City walls to attend to the garrison despite his original agreement to only work in the Canongate. The freemen barbers complained to the Incorporation and asked that he be removed. The dispute dragged on with Robert Lilburne the Commander of the English forces petitioning the Provost on Priest's behalf and it was not settled until the Duke of Albemarle, one of Cromwell's lieutenants, ruled that Priest should go back to the Canongate.[1]

The craft had some difficulty in maintaining its numbers, which had not exceeded eleven since 1640. By 1647 the number had reduced to eight and to boost the numbers apprentice barbers were admitted and these all subsequently became surgeons, although none of them had been apprenticed to a surgeon as they should have been. This was brought to an end by an Act of 1648 and subsequently no barber could be admitted as a surgeon unless he had qualified in surgery.

Surgeon-Apothecaries

The political situation now took a hand. In early 1644 as a result of the signing of the 'Solemn League and Covenant' by the rump of the English Parliament and the Scottish Covenanters, a Scottish force of 26,000 men, under the leadership of David Leslie, invaded England and joined with Oliver Cromwell.

Accompanying the Scottish army were two apothecaries, James Borthwick and Thomas Kincaid. In return for the assistance that they had given to the surgeons during the campaign, they were both admitted as members of the Incorporation of Surgeons, although neither of them had undergone an apprenticeship as surgeons. Borthwick and Kincaid were held in high esteem and because of their influence, the dispensing of medicines began to be taught alongside surgery . This proved to be a more acceptable combination for the apprentices and more chose this than the alternative combination of barber and surgeon. The result was the formation of the Surgeon-Apothecaries as a Fraternity, set up by a Town Council Act of 1657. This was subsequently ratified by Parliament in August 1670.[1]

This did not settle the relationship of the apothecaries with the other medical professions and there followed a period of major disagreement between the professions. The physicians were particularly suspicious of the apothecaries and there were frequent disputes between them. The physicians accused the apothecaries of diagnosing and treating illness. The apothecaries on the other hand were very wary of the physicians supplying medicine to their patients. In order to improve their position the Apothecaries applied to the Magistrates for the right to examine and test the ability of all who wished to practice the 'arte of Apothecarie' within the burgh and to ensure that those not qualified were prevented from practising. They also asked that the Council should elect two of their members to visit premises and report any faulty drugs. This petition had sixteen signatories, four of whom were surgeons including Borthwick and Kincaid.

Despite protestations particularly from the physicians who claimed that they should have the right to examine the shops, the Magistrates granted this request. However, they pointed out that the Act in favour of the Surgeon-Apothecaries did not elect them into a Corporation. It was only for the art and good of the people, so any hope the apothecaries had of forming a separate Incorporation was dashed. As they were not recognised as an Incorporation in their own right, this had the effect of bringing the apothecaries under the protection of the surgeons. However they could not carry out any surgical procedure. This included blood letting, which the Apothecaries were doing from time to time, although they were careful not to call it such in any invoices.

Things rumbled on until 1680 when the Incorporation of Surgeons brought a prosecution against Patrick Cunningham an apothecary for allegedly carrying out surgery including blood letting. He was not prepared to bow down to the surgeons and he brought a counter prosecution against the Incorporation of Surgeons and the Surgeon-Apothecaries. The substance of his case was that pharmacy and surgery were two distinct trades and employments which should not be practised by the same person. This became a test case between the professions and eventually was brought before the Court of Session.[1]

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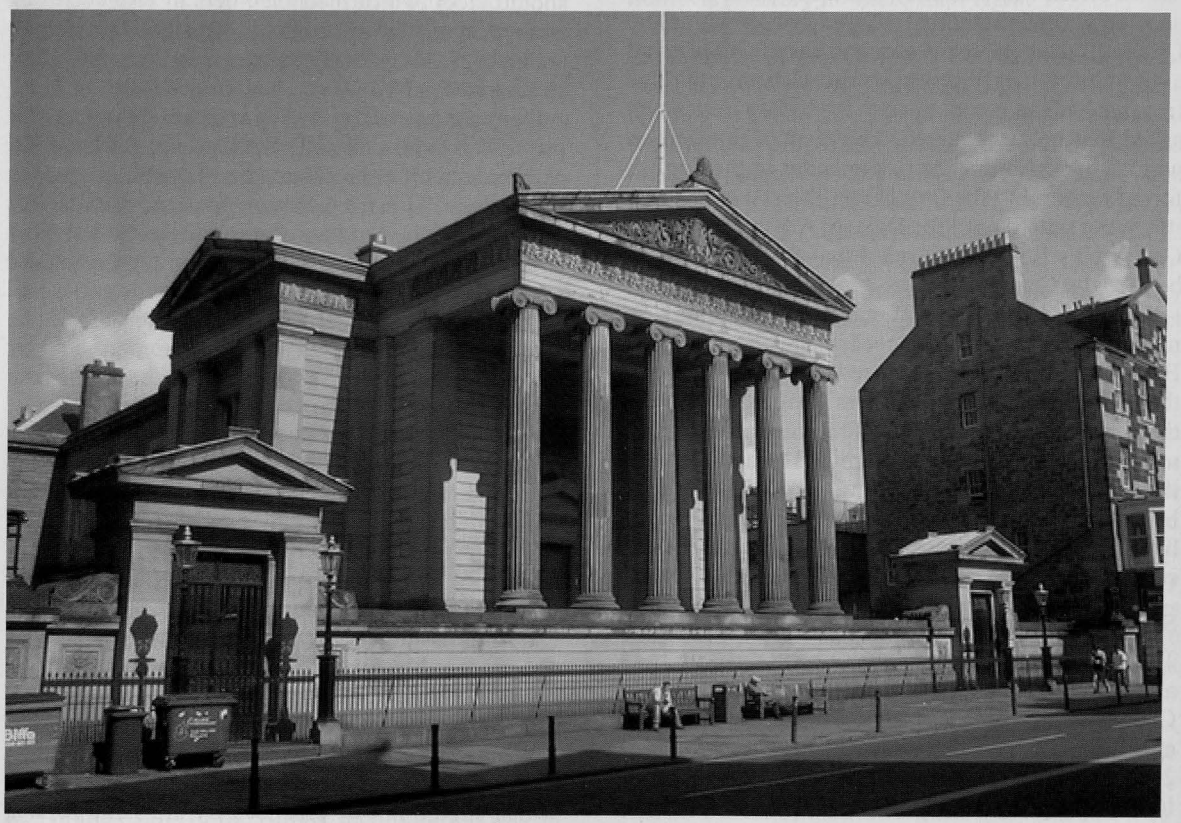
The Decree of Separation

Despite pleadings on behalf of both parties, with the Surgeons claiming that they had always been privileged to practice pharmacy,[14] the Judges of the Court of Session agreed with the apothecaries' submission and in 1682 granted a Decree of Separation. This ruled that within the City of Edinburgh one and the same person could not be employed both in surgery and pharmacy. In an attempt to reach some compromise the Decree also said that the surgeons could continue to buy and sell simples and that it did not apply to the Surgeon-Apothecaries, although they had to chose whether to become members of the Incorporation of Surgeons or join the Fraternity of Apothecaries. At this time there were ten surgeons, ten surgeon-apothecaries and six surgeon-barbers, as well as the simple barbers. In the event, only one surgeon-apothecary chose to join the apothecaries, which was in future known as the Fraternity of Apothecaries. The apothecaries were now on their own with both the surgeons and the physicians determined to exercise control over them. Each quoted the legislation which they thought was favourable to them irrespective of whether this was current legislation or not.

The physicians were granted a charter in 1681 to form a Royal College of Physicians, despite strong objections from the surgeons who felt it encroached on their privileges. Interestingly the apothecaries were happy to support this. In retaliation the Surgeons then took steps to obtain a new charter for themselves but this did not succeed.

A dispute now arose on who should be responsible for visiting the apothecaries' shops. The physicians based their claim on their newly won charter. In 1684 the Privy Council authorised the physicians' representatives, together with one or two of the oldest apothecaries, to inspect the apothecaries' shops. The Apothecaries and the Surgeon-Apothecaries objected as they felt their rights to examine apothecaries given to them in the Act of 1657 were being infringed and asked the physicians for an interpretation of the Act.[6]

The physicians gave a conciliatory reply in which they said they had no intention of interfering with the privileges of the other body. However, the Privy Council by a further Act of November 1684 gave the President and others of the College the right of inspection, on the grounds that the physicians should be convinced and satisfied that the apothecaries that dispensed were qualified to do so and the drugs were good and sufficient.[7] The Act went on to state that no person who had not already been examined and admitted by the Fraternity of Apothecaries should be allowed to keep an apothecary's shop, except those that shall be tried and approved by the President and Censors of the College of Physicians.[11] The College however undertook not to test apothecaries who had not previously been examined by the Fraternity.



The Royal College of Surgeons, Edinburgh

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That this was the case is shown by notes in the minutes of the Fraternity relating to two apothecaries being examined by the College and sent back to the apothecaries for final examination.[5] It seems therefore that although the relationship between the two bodies was amicable at this time, the College was still determined to maintain control over the apothecaries.

Surgeons and Apothecaries combine

The surgeons on the other hand were not prepared to let matters rest. In 1684 they gave notice that they intended to continue admitting apothecaries and they succeeded in getting the Town Council to agree to a surgeon being appointed as sole inspector of the apothecaries' shops.[7] A Surgeon-Apothecary was also elected as inspector in 1687, but the apothecaries objected and appealed to the Lords of the Session who overruled the Town Council and appointed an apothecary in his place.

The surgeons were not prepared to accept defeat. They tried to obtain a new charter and this was granted by King James II in 1686. Parliament refused to ratify this so it never became effective. This situation continued until 1694 when King William and Queen Mary granted a patent in favour of the surgeons and surgeon-apothecaries which was ratified by Parliament in 1695. This William and Mary Patent overturned the original 'Decree of Separation' and would have had the effect of combining surgery and pharmacy. The apothecaries felt that once again they were losing their rights. They approached Parliament and made their case again for surgery and pharmacy being two separate disciplines. They quoted a number of cases where the surgeons had oppressed apothecaries. These were mostly in situations where there had not been a surgeon available and the apothecary had treated a wound or bled the patient.

It appeared to the surgeons that this was a controversy that was going to last for a long time. They were in a bad way financially. A dispute with the barbers which lasted for four years with legal actions on both sides had virtually bankrupted the Incorporation, so they were not in a position to have a long-running legal wrangle with the apothecaries. The radical solution they proposed in 1721 was to offer membership to all the fifteen Edinburgh apothecaries to be admitted as free surgeons on payment of £50 each. All were admitted and the Edinburgh apothecaries returned to the surgeons' fold.

Despite the arguments over the standing and the responsibilities of the two professions, they had continued to co-operate in other ways. From 1702 the apprentices of the apothecaries had received instruction in chemistry and the pharmaceutical processes at the College of Surgeons. With the increasing emphasis on formal education the Royal Public Dispensary was opened in 1776, largely through the efforts of Dr Andrew Duncan, of the College of Physicians, and classes in pharmacy were organised there. These classes eventually led to the formation of a School of Pharmacy which became part of Heriot Watt College.[15]

Once the amalgamation of pharmacy and surgery was completed the Incorporation applied to the Town Council for an Act to confine the practice of pharmacy to those entitled to the freedom of the Incorporation of Surgeon-Apothecaries. This was opposed by the physicians who quoted the earlier Acts giving them the power to examine the apothecaries. This smouldered on for some time and there does not seem to have been any final resolution.

The controversy over the responsibilities and privileges of the apothecaries, surgeons and physicians was, in the end, solved by the growing knowledge needed to be effective practitioners in one or other of the three disciplines with the need to specialise in one discipline or the other. This meant that an apprenticeship alone was not sufficient and there was a growing need for formal education as well. The situation was aided by the growing population and the increasing level of income. There was a high standard of living to be had once the medical practitioner or surgeon was established in practice, although the early days of practice, particularly in country districts, was still a struggle.

The Royal College of Surgeons

The surgeons were keen to improve their status in the community, although they wanted to retain the monopoly granted to members of the Guild in 1505. They saw how the physicians' status had grown through education and the founding of their Royal College and how this enabled them to regulate their profession. In 1778 the Incorporation of Surgeons was granted a Royal Charter and they formed the Royal College of Surgeons of Edinburgh.

The surgeon's apprentice was both a source of income, with indenture fees around £50, and a cheap source of labour. Of course many were treated well and became part of the family. In Edinburgh, unlike other parts of the country, they were always allowed to attend medical lectures and these included anatomy, surgery and chemistry.[9] With the formation of the College and the improved status of surgeons, the apprentice's position improved quickly. By 1820 they were recognised as students of medicine and hospital training and attendance at lectures became the normal life of the student. Those who were apprenticed had the benefit of a reduced fee to become Fellows. In 1816 this was £100 as opposed to £250 for those who had not followed an apprenticeship.

In 1806 the College of Surgeons decided to revise the examination regulations. One reason given was because of the ignorance of candidates in pharmaceutical and chemical knowledge. It was believed that this was due to the neglect of their practical education, which could only be gained by serving an apprenticeship. It was ruled that candidates had to serve an apprenticeship of three

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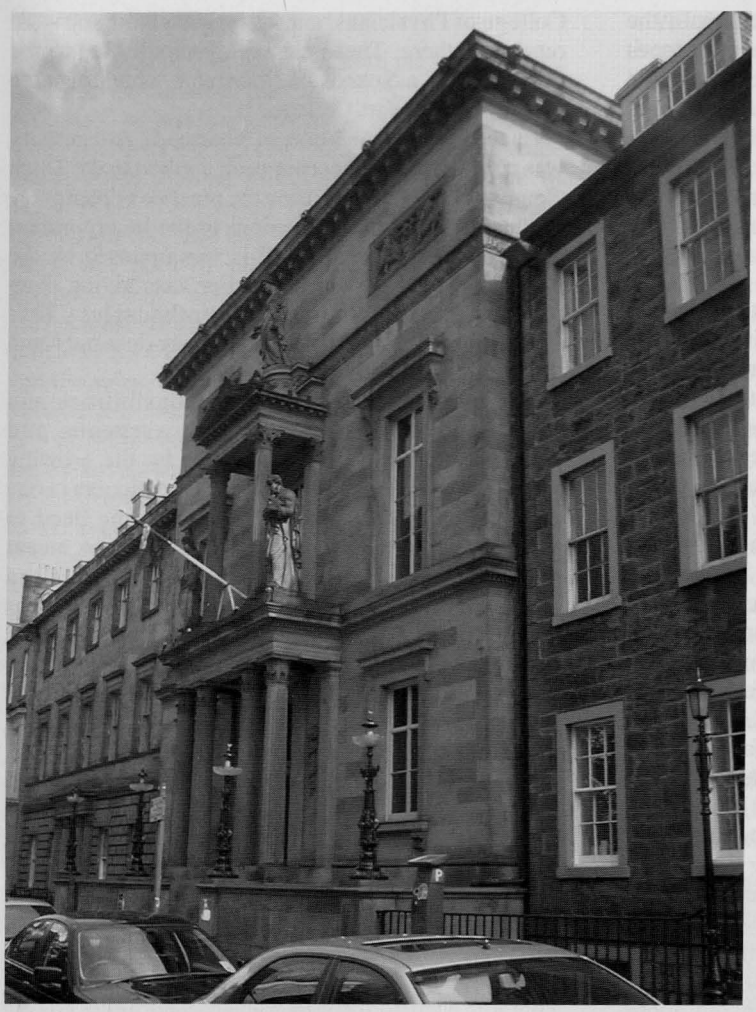

The Royal College of Physicians, Edinburgh

or more years and attend lectures on anatomy, surgery, chemistry and the practice of medicine. The examination requirements were expanded and developed. By 1828 the requirements included Chemistry and Materia Medica although there were no requirements for studying the practice of pharmacy or compounding. It was considered best to teach this by practical experience during the apprenticeship period.

Despite this a Diploma in surgery continued to be a route into pharmacy. In the 1842 Edinburgh Directory,[10] under the heading 'Apothecaries, Chemists and Druggists' there are 53 entries. Twenty of these are listed as surgeons. They include Thomas and Henry Smith of 21 Duke Street, Edinburgh. William Flockhart of Duncan and Flockhart, North Bridge, Edinburgh was also a surgeon although he did not practice as a surgeon.

Physicians and Pharmacy

The Royal College of Physicians in Edinburgh wanted to control and restrict the activities of Fellows and Licentiates of the College in order to improve the position and status of physicians. This led to a great deal of controversy. The Fellows mostly practised in Edinburgh within the area of jurisdiction of the College, but many of the Licentiates moved away and practised throughout Scotland and England and could not so easily controlled.

The Royal College of Physicians continued to distrust the apothecaries, largely because of attempts by the apothecaries to mix diagnosis and prescribing with the supply of medicines. Two other factors were the apothecaries joining with the surgeons and the continuing controversy over the power given to the physicians in their original charter to examine apothecaries' shops. As a consequence the College of Physicians was determined to gain control and separate the practice of medicine from that of pharmacy. In 1750 the College passed an Act stating

> No person who is a member of the Corporation of Surgeons or Apothecary's, or keeps an open shop for the dispensing of medicines shall be admitted a fellow of the College.

In 1754 after heated debate another act was passed which was clearly intended to separate the two professions. This stated that no member of the College or any physician licensed by them to practice 'physic' within the city may employ an apothecary or keep an apothecary's shop and all applicants for a licence to practice in the city had to give an undertaking not to open an apothecary's shop or practice pharmacy.

This did not prove to be the solution and there were many debates over a period of years with no practical solution being proposed. The matter was finally concluded in 1823 by an amendment to the Act of 1754 which read:

> If any Fellow or Licentiate of the College shall, by himself, or co-partners, or servants, keep a public Apothecary, Druggists or Chemist shop, he shall ipso facto forfeit all the rights and privileges which he does or may enjoy as a Fellow or Licentiate of said College, and his name shall be expunged from the list.[7]

This only applied in the city of Edinburgh and made little difference elsewhere in Scotland. Many medical practitioners continued to dispense medicines and they considered the supply of medicines an essential part of their income particularly in the country districts.[8]

The Chemist and Druggist

From the middle of the 18th century an alternative source of medicines and medical treatment started

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to emerge. These were the shops of the chemists and druggists. The services of the surgeon, physician and apothecary had always been available to those that could afford it. The poorer section of the population, when they were ill, had to rely on the help they could get from neighbours, friends and sometimes the quack practitioner. With the movement of population into the cities, the local availability of herbs and the knowledge of their use, which was a skill retained by older members of the community, was no longer available. This was coupled with the growing wealth of the population, who were able to call on the chemist for advice and to purchase either counter-prescribed remedies, or the growing range of proprietary medicines which were being advertised to the public.

The growth of the chemist and druggist in the early part of the 19th century was due in part to the emphasis on free trade. The nation benefited from its superior industry and technology, coupled with the ability to buy raw materials and then sell the finished goods in world markets without paying import and export duties. This emphasis on freedom to trade led to a waning of the power of the Guilds to maintain their monopoly in the country and in Edinburgh.[13] One of the first chemist and druggist shops was opened by H.B. Wylie, Chemist and Druggist, 38-40 Grassmarket in 1797. There is no evidence of any action being taken to prevent this business trading. Possibly this is because it was in the old burgh of Portsburgh and therefore fell outside the jurisdiction of the City Guilds.

The Apothecaries Act passed in England in 1815 had little effect on the business of pharmacy north of the Border. The chemist and druggist had by that time escaped from the oversight of both the surgeons and the physicians and had acquired a separate identity.

The 1868 Pharmacy Act

The 1868 Pharmacy Act introduced by Jacob Bell was intended to regulate the practice of pharmacy in Great Britain. The strong support in the country for free trade made it impossible to achieve a monopoly for the supply of drugs by pharmaceutical chemists. However some progress was made. The restrictions first introduced in the Arsenic Act of 1851 were extended by introducing a list of additional poisonous substances. The restrictions on their sale were not burdensome but they had the effect of giving a monopoly on their sale to chemists and apothecaries.[12]

The term 'apothecary' had been introduced during the bill's passage through Parliament. It was quickly pointed out that this restricted the right to carry out a business in pharmacy to chemists and licentiates of the Society of Apothecaries. This was strongly opposed by general practitioners and the medical societies in the West of Scotland. An amending act passed in August 1869 made it clear that all medical practitioners were able to supply medicines and it went further by making it possible for registered medical practitioners to register as Chemists and Druggists.[12]

The 1868 Pharmacy Act was intended to make certain that the sale of poisons and the dispensing of dangerous drugs were under the supervision of a qualified person. Between 1897 and 1900 the Pharmaceutical Society instituted 46 prosecutions against medical practitioners in Great Britain for employing unqualified dispensers, all in the West of Scotland. Despite this action doctors in the West of Scotland continued to dispense and in some cases to keep open shop, staffed by unqualified dispensers. The more stringent provisions of the Pharmacy and Medicines Act of 1908, requiring a qualified pharmacist present in every retail shop, also did not have much effect. The National Insurance Act of 1911 separated prescribing and dispensing but still allowed doctors to dispense in rural areas where there was no chemist or druggist. Even in Glasgow some doctors continued to augment their income by the sale of drugs, for many years.

During the century the work of the apothecary and the chemist and druggist became synonymous in the city of Edinburgh. The Pharmaceutical Society was formed in 1841. Initially there was little interest and only nine pharmacists around Edinburgh joined the fledgling Society. However its influence grew slowly and its control of pharmacy education was established in 1852 by the Pharmaceutical Society electing an examining body for pharmacy in Edinburgh. The qualification of the Pharmaceutical Society became the route to follow to qualify in pharmacy. The surgeons and physicians by this time had established their rightful roles and no longer felt threatened by the chemist and druggist, although it was not until the introduction of the first National Health Service in 1911 that physicians were prepared to give up their dispensing practices. Even then the regulations continued to allow dispensing doctors to continue in rural areas.

Conclusion

In the south of England the apothecary was the forerunner of the general medical practitioner. In Edinburgh despite attempts by the apothecaries to extend their role and to carry out other responsibilities as well as the supply of drugs, the power of the Incorporation of Surgeons and the physicians was sufficient to restrict the apothecaries to the supply of medicines only.

Their one chance of breaking out was when they were granted a Decree of Separation in 1682. However, the surgeons and physicians were determined to ensure the apothecaries were controlled by their Incorporation and probably because of the small number of apothecaries the chance was lost.[16]

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The opportunity for maintaining their independence in the city was finally lost when the remaining fifteen apothecaries were admitted into the Incorporation of Surgeons in 1721. Although the route into pharmacy continued for a time to be by serving an apprenticeship with a surgeon, followed by membership of the College of Surgeons, the supply of medicine was passing into the hands of the chemist and druggist. With the formation of the Pharmaceutical Society of Great Britain and the establishment of an examination board in Edinburgh, the age of the apothecary came to an end.

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Appendix 1

Monumental Inscriptions in the Churchyard of Greyfriars, Edinburgh:

185. Kinkaid, Mary Young wife of Thomas chirurgeon and apothecarie at Edinburgh died 1679.
186. Kinkaid, Thomas of Auchinreoch chirurgeon and apothecarie at Edinburgh died 1691 72 years.
278. Borthwick, James of Stow, of the family of Cruixtoun a chirurgeon-apothecary died 1676.

Appendix 2

Some Important Dates

1092	Establishment of the Barbers.
1505	Incorporation of the Surgeons and Barbers.
1588	Simple Barbers formed as a separate class.
1643	Act of the Edinburgh Town Council defining the duties of the Surgeons and Apothecaries.
1657	Act forming the Incorporation of Surgeon-Apothecaries.
1670	The 1657 Act ratified by the Scottish Parliament.
1680	Dispute between the Surgeons and the Apothecaries over their duties.
1682	Decree of separation forming the Incorporation of Surgeons and the Fraternity of Apothecaries.
1718	Final legal separation of the Barbers and Surgeons.
1721	All Edinburgh Apothecaries admitted to the Incorporation of Surgeons.
1778	Charter granted to form the Royal College of Surgeons.
1841	Foundation of the Pharmaceutical Society.
1852	Board of Examiners appointed for Scotland by the Pharmaceutical Society.

Review

Spezialisierung in der Pharmazie [Specialisation in Pharmacy]
Christiane Staiger. Eschborn: Govi-Verlag Pharmazeutischer Verlag GmbH, 2002, pp. 265: (ISBN 3-7741-0972-9).

As was suggested by S.J. Woodward at the Annual Meeting in 1970, many historians live too far in the past and forget to survey the rapid changes in nearer times, i.e. in the past century. In the 20th century medicine changed very rapidly from a practice based mainly on plant preparations to a practice chiefly dependent on synthetic chemicals. Major developments in the new discipline of pharmacology and in the understanding of disease states resulted in the need for many types of specialists.

In the Pharmacy Faculty of the Philipps-University, Marburg, Dr Christiane Staiger has undertaken a comprehensive study of the education and training of pharmacists from the early roots to the modern specialisation in several fields and the need for further continuing education. Understandably, her work concentrates on the developments in Germany before the Second World War, then on the differences under the regimes of the politically rigid German Democratic Republic (East Germany) and the more tolerant Federal Republic of Germany (West Germany) between 1945 and 1990, and finally on pharmacy in the united Germany.

Using 946 footnotes, 51 previously unpublished sources and 678 literature references Staiger weaves a story commencing with the apothecary trained by years of practice, which was followed by the private schools such as Tromsdorff's *ca* 1800 where basic scientific disciplines were taught in association with practical experience. Organised University training

https://doi.org/10.24355/dbbs.084-201802141340

together with training in practice was a logical development, but as medicine evolved courses lengthened and more advanced and specialised qualifications became necessary in order that pharmacy could establish its place as an independent discipline in science. In hospital pharmacy the doctorate became more common and universities offered postgraduate and research facilities supplementing the education for specialties such as pharmaceutical analysis, pharmaceutical technology, drug information, clinical pharmacy, hospital pharmacy and general practice, dispensary or community pharmacy. Certificates, diplomas and degrees can indicate personal active participation but the question recurs: should continuing pharmaceutical education be voluntary or compulsory? Should it be tied to certification and licensing? The author brings the matter up to date with a discussion of steps taken in the united Germany and in the European Union committee in Brussels. Finally the author discusses the trends in further pharmaceutical education in Germany and surveys and discusses the position in 14 European Union countries and 6 non-European Union countries. The very useful appendix presents details of two East German (1974, 1987) and two West German (1980, 1984) orders for the pattern of future pharmaceutical further education and specialisation.

This book, derived from a doctoral thesis, is valuable because, although based on the German experience, it provides much information that is relevant to our current debates on continuing professional development (CPD) in Britain. A index of subject matter and names would have been useful. Nevertheless, future historians will gain much from perusal of this considered discussion of our profession. **W.E. Court**

Metal boxes for cough lozenges

Dr Henri C. Silberman

While nowadays drugs and confectionery come mostly in bags and cardboard boxes, they were sold at the end of the 19th century and up to recently in metal containers for protection against humidity.

Tins that contained cough medications usually land in the household trash. Some may serve as containers for buttons, needles, screws or such things. Some arrive eventually at flea markets from where they find their way into private collections and even into museums.

Metal containers are often the only tangible remnants of small manufacturers of cough lozenges. Such old English metal containers of up to ninety years of age are in surprisingly good supply at sources serving mostly British and American collectors of old tins. While many British manufacturers of cough lozenges simply went out of business, others merged into larger companies and a very few survived maintaining their original name.

An indication of how fashionable tin collecting has become was an exhibit at the venerable Victoria and Albert Museum in 1971. The book issued in connection with that occasion by collector Franklin provides a host of valuable information on tins.

Another memorable event in tins collecting history was the dispersion of the Scheer collection of biscuit and Decorative Tins in 1995. Sotheby's produced a very valuable catalogue for the sale.

All catalogues of exhibits, like the latest catalogue from the Blass Collection in Lugano, Switzerland, put the emphasis on biscuit tins and on the beauty of tin decorations. The scientific aspect of box manufacture and of various printing techniques is often also included. Valuable books have appeared over the years, some out of print, some still available, like in the handy booklet by Tracy Dolphin which appeared in the Shire series.

'Tins' meaning metal boxes are made of tinplate. The term 'tin' meaning the container is thus a misnomer as the metal containers were not made from solid tin, but from sheets of iron or steel coated with a thin layer of tin applied by dipping the sheet into molten tin or, in a later development, by electroplating.

The origin of tinplate can be traced to the tinning of hammered iron sheets carried out in Bavaria in the fourteenth century. The industry spread to Saxony and Bohemia. By the seventeenth century a flourishing trade was centred around Dresden with export to many countries, including England.

The production of tinplate in England began in Pontypool in the late 1600s. The town and neighbourhood of Pontypool contained large forges and iron mills where tinplate was manufactured.

John Walker, a matchmaker in Stockton-on-Tees, and Thomas Huntley, a biscuit baker in Reading, were the first to use tin boxes as a method of keeping their goods dry. Thomas Huntley's boxes were made by his brother Joseph, who founded Huntley, Boorne & Stevens.

Early tins up to 1850 were made by hand and cut from standard-sized sheets of tinplate. They were made in small workshops from tinplate brought from South Wales. The production of early tins required little skill, shapes being very basic, and few tools were required. Wages were low and because most of the work was unskilled, it could be done by women.

In early hinged tins from the late 1860s, printed paper labels were glued onto the metal, a procedure which was employed for a long time after other methods were in use. Indeed, as late as 1926, an issue of the *Chemist and Druggist* contained detailed instructions on the preparation of adhesives and on

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the labelling of tins with printed paper glued on a prepared surface.

In the 1860s transfer printing was developed. In this process the picture was printed on gummed paper. The tinplate was first coated with a transparent varnish. When it was almost dry the transfer was applied. Then the plate was soaked to remove the paper. Finally the sheet was baked in an oven, varnished and baked again. In this and later processes the tin-plate was printed flat and then shaped into boxes by hand. By 1900 dies were being used to stamp out the shapes.

In a further development, coloured decorations and text were printed directly onto tin plate by different processes. Offset lithography displaced transfer-printing from 1875 on. Photographs of factory sites from the period around 1905 impress by the lack of protection for the workers. How easily could the unprotected hair of one of the women workers become entangled in a transmission belt!

Two leading companies among many were Crabtree and George Mann. Crabtree of Leeds represent well the pioneering achievements of the British industrial revolution. The firm R.W. Crabtree and Sons, Ltd, founded in the year 1895, began business as engineers and millwrights. R.W. Crabtree was known the world over for its printing machines. The company joined the Vickers group in 1966 to become Crabtree-Vickers Ltd. The other company in the same line of production was George Mann & Co. Ltd, also from Leeds. That company was established in the year 1852 as a general engineers and millwrights plant. Around 1872 the manufacture of litho and letterpress printing machinery became a speciality.

One fascinating aspect of British metal box development is the interconnection of different trades and of different families. Offset lithography was developed by the London printing company of Barclay and Fry. Barclay was connected with the banking Barclays and Fry with the confectionery firm of the same name. Huntley, as we have seen, was connected with the biscuit company. These connections continued for generations. The leading persons went through the same schools and they belonged to the same clubs. They built the British Empire.

Tin for Boots Bronchial Lozenges bearing the logo 'CBC' in an oval, used for a few years around World War I. The delicate 'art nouveau' design shows a lady taking a lozenge from the tin.

A 'Compound Glycerin of Thymol Pastilles' tin from the 1950s to 1960s. The composition refers to Compound Glycerin of Thymol BPC 1963.

Boots

The Boots Company started in 1849 with a herbalist shop in Nottingham run by John Boot. He called his shop the 'British and American Botanical Establishment'. The Boots were an intensely religious family completely dedicated to Wesleyan Methodism. Jesse Boot, his son, was born in 1850. Jesse was only ten years of age when his father died. In 1874 he decided to enter the proprietary medicine business as a cut-price vendor. Boot took the biggest advertising space in the local paper. Under the headline 'Patent Medicines retail at wholesale prices'

M. AND J. BOOT,
WHOLESALE HERBAL AND PATENT MEDICINE STORES,
38, GOOSE GATE

BOOTS CELEBRATED BRONCHIAL LOZENGES, per Packet, -/7_ _ and 1/-
Beecham's Mac's Cough Pills, 1/_ for – 11d
Brown's Bronchial Troches, 1/1_ for – 11
Fenning's Lung Healers. 1/1_ for –11
Fenning's Whooping Cough Powders, 1/1_ for - /11
Keating's Cough Lozenges, 1/1_ for -/11
Pectorine, 2/2 for 2/1
Brompton Cough Specific, 1/1_ for -/11

https://doi.org/10.24355/dbbs.084-201802141340

The 'Boots Pure Drug Company Ltd' logo appeared on products from about 1888 to 1971

he offered 128 separate proprietaries at cut prices. Eight items from that advertisement, which appeared in the *Nottingham Daily Express* of February 24, 1877, were cough remedies. They were all secret remedies. One at least made its manufacturer, Beecham, immensely rich. The phenomenal rate of growth of Boot's Goosegate shop was maintained by very aggressive salesmanship, followed later by the start of a manufacturing division.

There were countless different Boots tins which contained a variety of cough medications. It is, as is

Regesan Ltd was a trademark for a range of Boots cosmetics and toiletries, used from the 1890s to the 1950s.

the case with most other tins, very difficult to date them with precision. Even the Boots archivist who provided me with pictures of older tins is unable to inform me with precision when a certain cough medication was put on the market.

On the inside of a Boots 'Compound glycerin of thymol pastilles' tin which stems from the 1950s to the 1960s, the exact composition of the medication

The tin has Regesan Ltd and Boots and is 8 x 4° x 1 cm; the lid is hinged to the box by a single wire and dates from the 1920s to 1950s. The aromatic product contains licorice, menthol, capsicum, and cinnamon.

is given:

Sodium Borate 3.64	Amyl-meta-Cresol 0.1
Sodium Benzoate 1.4	Ol. Pumilio Pine 0.1
Sodium Salicylate 0.93	Eucalyptol 0.27
Menthol 0.05	Methyl Salicylate 0.06
Thymol 0.09	Glycerin 6.78
Sugar 98.9	Dextrose 57.3
Acacia Mucilage 9.5	Colour q.s.

Boots is one of the few old pharmaceutical companies that has survived since its beginnings under the original name. Through acquisitions and mergers which took place during the existence of Boots, this huge organisation owns now several competing cough lozenges brands and formulas. In 1972 though, Boots had almost disappeared as the then Glaxo Group announced a proposal to merge with Boots. The Monopolies Commission ruled after five months of investigation and deliberation that the merger should not proceed.

Potter

Potter is still a name in use for products now being manufactured by Ernest Jackson. Potter does not exist any more as an independent company and the well-known Potter lozenges come now in cardboard instead of metal containers. The company was started by Henry Potter in the Fleet Market, Farringdon Street, London in the year 1812.

Henry Potter and his family business prospered under his shop sign which read 'Seedsman, Herbalist and Dealer in Leeches'. The production methods, which changed of course over the years, are described in numerous illustrated publications issued by Potter as means of publicity for its products. In these pamphlets one can follow the changes which took place gradually within the company. Best known products were Potter's catarrh pastilles and Potter's asthma cure.

An article by Mr Wren, then a director, described

https://doi.org/10.24355/dbbs.084-201802141340

The Potter Catarrh Pastilles tin states 'A sure protection against infectious diseases. Cure coughs, colds, hay fever, bronchitis'. No composition is shown on the tin. The tin still has the paper strip around which served as a closure, printed 'Medicine Stamp Duty. No Government guarantee. duty 3d. Potter and Clarke Ltd London.'

an historical visit to the manufacturing facility of Potter and Clarke Ltd in Fairclough Street, London E under the title 'Winged Lion's new wing' in the *Chemist and Druggist* of July 1926. The winged lion was the trade mark of Potter and Clarke. The article described the manufacturing laboratories as they existed then, the printing department, the manufacture of pills, tablets, pastilles and lozenges. Potter and Clarke was split up in 1991. The Potters products together with Potters Catarrh Pastilles were acquired by their competitor Ernest Jackson. Ernest Jackson in its turn was acquired in 1989 by Cadbury Schweppes.

Savory and Moore

The pharmacy of Savory and Moore at 143 New Bond Street in London was founded in 1794 by Thomas Field Savory. Throughout the 19th century the business prospered. It played an important part

The relatively large Savory & Moore tin is 10.5x8x2-cm. It has no explanatory information, but may have had a paper insert.

during the Crimean War: it produced a field medical kit and held War Office contracts. In 1928 Savory and Moore acquired John Bell and Croyden, and in 1950 acquired the business of Squire's of Oxford Street. In 1953 the business had the honour of preparing the royal anointing oil for the coronation of Queen Elizabeth. The original Savory and Moore Pharmacy has been preserved and is now exhibited in the Melbourne Medical History Museum. The company Savory and Moore itself has become part of UniChem.

Allen and Hanbury

Of all the glycerine and black currant pastilles, the best known are perhaps those of Allen and Hanbury. The firm of Allen & Hanbury dates back to 1715. In that year, in old Plough Court, Lombard Street, in the City of London, Silvanus Bevan, an apothecary and Quaker, opened his shop. William Allen became proprietor at the close of the eighteenth century and forged a link with the Hanburys by marrying as his second wife Charlotte Hanbury.

The firm made a great variety of different pastilles, including Voice Jujubes, 'a useful and agreeable stimulant before speaking or singing', and throat pastilles, one variety of which contained menthol, cocaine, and red gum. In the beginning of the 20th century narcotics such as cocaine were popular ingredients in over the counter cough preparations. Nowadays the alkaloid codeine is still an ingredient used to calm the coughing urge. But not cocaine, too dangerous and addictive.

In the Allen & Hanburys Wholesale List of 1912 there are dozens of different products. One of them was the famous A & H glycerine and black currant jujubes or pastilles. The designation depended upon whether the medication was oval or rectangular. The making of the pâte de jujube was then a French art. The firm secured the help of a French firm for making the product around 1850.

Allen & Hanbury were taken over by Glaxo in 1958. The Allenburys brand of glycerine and black currant pastilles has been sold to the Swiss Doetsch Grether company, which now produces and markets the pastilles under its own name. At first, from 1930 on, Doetsch Grether were the Swiss distributors of the Allenburys black currant pastilles. Then, in 1974, Doetsch Grether purchased the rights and started production themselves while GlaxoSmithKline stopped the production of the pastilles in London. From 1983 the designation Allenbury was replaced by the designation Grether.

The conglomerate GlaxoSmithKline owns through various mergers several cough lozenge brands which were previously competing independent products. They may still be competing or the parent company may drop them if it does not fit into its overall marketing strategy. It all depends sometimes on which brand is turned over to an advertising company for a big promotional push. That was the case with

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Smith Kendon Altoids. In other instances a brand may be sold. We see such strategies every day with big companies.

Pholcodine is still in use as a centrally acting cough suppressant. The medication was sold for instance by H.G. Pilling (Chemists) Ltd. at Timperley. It says on their label 'Each pastille contains Pholcodine 0.106% in a fruit flavoured base. Caution: it is dangerous to exceed the stated dose'. That dose was one pastille every four hours for children over 5 years of age and double for adults.

Parkinsons

Parkinsons, the now defunct company of Burnley, Lancashire, was established in 1848 by Richard Parkinson, a commercial traveller and one-time Wesleyan day-school teacher. In 1870 the firm transferred to Burnley. The family-owned business thrived and the various pills it produced became a household name throughout the country. The enterprise carried on into the fifth and final generation when it collapsed in 1983. The Parkinson Company was the first in England to coat pills with sugar. A 49-page sales manual from about the year 1920 contained over 280 different products including Iodised Throat Tablets, Bronchial Pills and Chest and Lung Tablets. Many early lozenges, in Britain at least, contained chloroform, particularly chlorodyne lozenges, based on Tinctura Chloroformi et Morphinae Composita.

Burroughs, Wellcome

The Burroughs, Wellcome & Co. of London was established in London in 1880 by two American pharmacists, Silas M. Burroughs and Henry S. Wellcome. They made compressed drugs called 'Tabloids', also 'Voice tablets' with a basis of potash, borax and cocaine. These drugs came in beautifully graven white boxes with a blue silk label. The 1913 price list names several pastilles of the Tabloid brand, among them Menthol and Eucalyptus, Morphine and Ipecacuanha, Pectoral, Pine Tar Compound etc. Many other companies sold a host of over the counter medications with slightly different formulations which all had the aim of curing the same throat or chest diseases. Suppressing the symptoms was then often confused with curing. Then, it was not unusual to advertise that over the counter cough remedies cured a great number of diseases, particularly tuberculosis.

In 1995 Glaxo and Wellcome merged to form Glaxo Wellcome and after further acquisitions and a merger the company is currently named GlaxoSmithKline. That elephant's wedding between the multinationals Glaxo Wellcome and SmithKlineBeecham took place in December 2000 and the name Beecham has been dropped.

Beecham

But Beecham is not forgotten, at least not by pharmaceutical historians. Beecham, like Allen & Hanbury and Burroughs Wellcome fabricated solid cough medications and ended up with several others in GlaxoSmithKline.

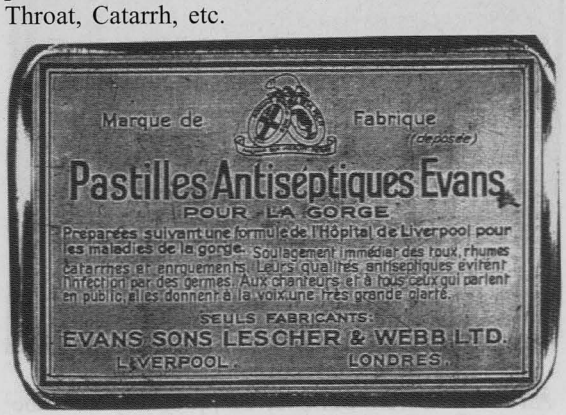
Thomas Beecham (1820-1907) was born in Cambridge and rose from the crowded ranks of pedlars of patent medicines to become one of the most successful vendors in the Victorian age. Thomas Beecham conducted his business from Wigan and then from nearby St Helens. Beecham's speciality, besides making pills, was extensive advertising. One could not open one daily paper in the late 19th century without catching sight of a Beecham advertisement. The Beecham cough pills were advertised as containing no opium. They claimed to be a safe remedy for coughs in general, asthma, bronchial affections, shortness of breath, tightness and oppression of the chest, wheezing, etc. Such statements were to be accepted with great caution. According to an independent analysis around 1909 each pill of an average weight of 1.4 grains contained

morphine (in opium) 0.0035 gr
powdered squill 0.1 gr
powdered aniseed 0.3 gr
ammoniacum 0.3 gr
extract of liquorice 0.4 gr

In 1938 the Beecham company acquired Macleans and grew with other acquisitions and with the manufacture of semi-synthetic penicillins until the Beecham name disappeared.

Evans Medical

Evans Medical seems to be one of those companies too which grow and grow until they disappear by merger with another company. In this particular case Evans merged with Glaxo. Corporate strategy finds it sometimes advisable to get rid of certain businesses. Evans Medical is now part of Celltech Group after having left Glaxo. At one time the Company was called Evans Sons Lescher and Webb, Ltd, which produced Ionets medicated pastilles against Sore Throat, Catarrh, etc.



This Evans Sons Lescher & Webb tin in French for sale abroad states that the formula is from a Liverpool Hospital. The tin is not too old.

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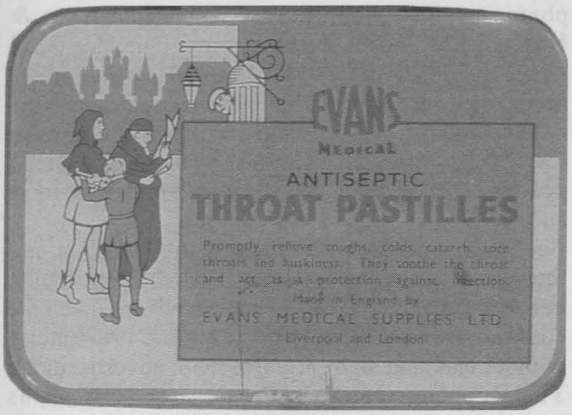
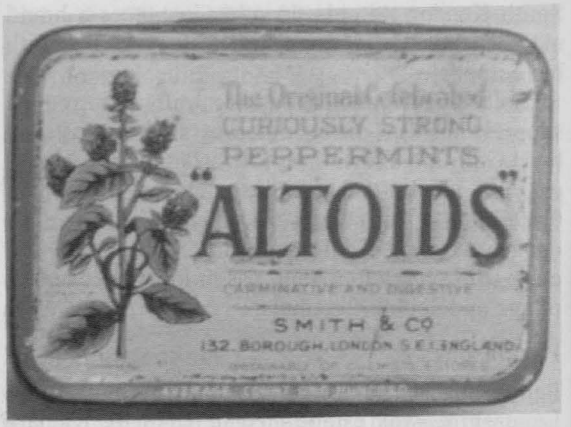


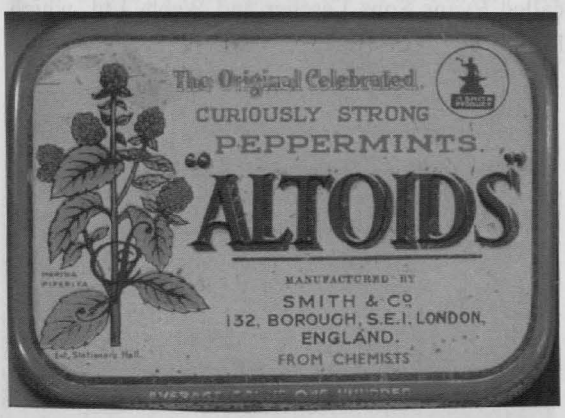
Tin from Evans Medical Supplies of Liverpool and London. The picture shows a medieval scene. The composition is printed round the rim of the lid and includes menthol, terebene, eucalyptol, peppermint oil, potassium chlorate, sodium chlorate, borax and liquorice extract.



The 1920s version of the Altoids box, showing a mint plant on the left. On present day metal boxes the new design still names Smith Kendon, though there is no Smith Kendon any more.

Smith Kendon

Smith Kendon, Ltd produced 'Altoids'. Smith Kendon was founded in 1780 in Fell Street, off Cheapside, London, by William Smith. A price list dated 1813 contains a range of medicinal lozenges, 'tablets', and confectionery items. Opium lozenges were featured in addition to peppermint, coltsfoot, horehound, cinnamon, and heartburn and liquorice lozenges. Another product list prior to 1864 covers no less than 24 pages. The company continued at Fell Street until 1864, when it moved to 132 Borough High Street in London. At that time Samuel Smith, a grandson of the founder, directed the company. Later, Kenneth S. Maurice Smith and Donald A. L. Smith, direct descendants of the original founder were in control until shortly after the World War II.



An older tin from Smith & Co., probably from the 1950s. The company emblem is of a smith with a hammer and anvil. The Bridewell Museum, Norwich has a display of several different Smith & Co. pastille and lozenge tins.

The designation Kendon was composed from the names of the last owners, Kenneth and Donald. In July 1988 I went to Lee in South-East London to meet with Mrs Anita Smith, the widow of the last owner of Smith Kendon, who had died about two years before. She told me of the blitz and how the factory had been hit and destroyed during the war, like so many other factories. The firm came under the ownership of Beatrice Foods, a well-known American food company and a brand new facility was erected in South Wales. The main reason for the sell-out was that, as in so many similar cases, there was no member of the Smith family to inherit the business and play an active part in it.

Beatrice Foods also acquired Callard and Bowser, an old confectionery firm established in 1837. Smith Kendon became part of Callard and Bowser. In 1988, the Beatrice Organisation sold the Callard and Bowser group to a financial institution.

The production of the medicated pastilles and lozenges which formed the mainstay of the Smith Kendon business until the 1960s ceased temporarily about 1978. Kraft, also an American Food Company, acquired Callard and Bowser in 1993 and with them the Smith Kendon name. Great efforts are presently being made by Kraft to make Altoids with different flavours in the United States, Canada, and elsewhere. Altoids still come in metal boxes. The design of some boxes has changed and no-one who buys a box of Smith Kendon Altoids now is able to know who is behind the brand and where the product is actually produced.

Timothy Whites and Taylors

The story of Timothy White is typical of many other enterprises which started in the 19th century. There was indeed a Timothy White, born in 1825 in Rickmansworth. In 1848 White established his first shop in Portsmouth, initially an oil and drysalter's

https://doi.org/10.24355/dbbs.084-201802141340

business, later including household necessities and drugs. In 1869 White registered with the Pharmaceutical Society. Timothy White's son, Woolmer joined the business and new warehouse and branch shop opened. In 1888 Woolmer White qualified as a chemist and additional branches were opened in Southsea, the Portsmouth area, the Isle of Wight and across England.

In 1904 the business formed into a private limited company. A second warehouse was built to manufacture galenicals, proprietary articles and toilet soaps. In 1908 Timothy White died and Woolmer White took over full control of the business. In 1927 a reciprocal trading agreement between Timothy Whites Ltd and Taylor Drug Company Ltd of Leeds was signed. In 1928 Timothy Whites had 100 shops. In 1935 the company Timothy Whites and Taylors Ltd was formed, with a chain of 753 shops. The story of the Taylors Drug Company which joined Timothy Whites is an interesting one too. It started with a man called Mason late in the 19th century.

William Barker Mason began his career as an apprentice to a wholesale druggist at Thirsk in Yorkshire and later became a travelling representative of a firm of wholesale druggists in Leeds. Mason opened his first shop, which also contained a grocery department, in Leeds, followed by one in Bradford. By 1887 there were nine shops. The shops were given Mason's wife's maiden name of Taylor.

The Taylors Drug Company expanded rapidly, with shops in the Leeds area, and gradually across Yorkshire, Lancashire, Durham, Cumberland and Westmorland; all the shops were controlled by pharmacists. By 1900 the company owned 68 branches and was at that time the second largest multiple pharmacy chain in Great Britain. A factory and a warehouse were built; galenicals and proprietary medicines were manufactured.

In 1912 Mason retired. There were 130 shops then. In 1927 control of Taylors Drug Company was purchased by a holding company. This Taylors Trust Ltd acquired Squire and Company, which in its turn had merged with Needham, a company which controlled several chemists' shops. By 1935 Taylors owned over 240 shops. In 1968 Timothy Whites and Taylors was acquired by Boots.

Lofthouse

Fisherman's Friend lozenges were first formulated by James Lofthouse, in 1865 in his small apothecary's shop in Fleetwood. The inhabitants of Fleetwood, a small fishing town in the north west of Lancashire, would purchase these lozenges from the pharmacy by asking for "one ounce of friends" or "some of those Lozenges that the fishermen use", hence they became known as Fisherman's Friend. A real sales effort was only begun in the 1960s. In an interval of only 10 years the product became known the world over. The company is still run by the Lofthouse family. The original formulation has been joined by other variants such as sugar-free and lemon.

A typical formula is:
Sugar
Extractum Glycyrrhiza 7.317% (liquorice extract)
Menthol 0.9%
Eucalyptus Oil 0.153%
Capsicum Tincture 0.02%
Oleum Cubebum 0.49%
Dextrin
Gum Tragacanth

Cubeb, the dried unripe berry of the tropical shrub *Piper cubeba*, is also of the pepper family. The exact composition is unimportant: I own three metal boxes and on each one the given composition is slightly different. The metal boxes for Fisherman's Friend lozenges are produced by a Swiss Company located at Thun. Many tins for products all over the world are made by this Swiss company.

Conclusion

In conclusion this review has aimed to satisfy the interests of tin collectors, of pharmacists and of historians. Concentrating on British tins only, I have found abundant literature on tins and also valuable information from some companies and from public archives. The subject is far from being exhausted.

In the 18th and 19th centuries numerous chemists had a laboratory behind the shop and made up their own remedies, including cough remedies, and sold them through their store and to other chemists. Elucidating company histories and company structures is often a difficult task. There were many small producers of lozenges at the beginning of the 20th century and it is almost impossible to identify them all.

Acknowledgement

The present article is based on an oral presentation on 13 April, 2003 at the BSHP Conference in Edinburgh under the title *Tins, Tablets and Tussis*. It has been made possible through the support of the Ricola Company of Laufen, Switzerland.

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The National Archives: Historical Manuscripts Commission has reported the following accessions relating to pharmacy in **2002**. Website www.nationalarchives.gov.uk

National, Special and University

Reading University: Rural History Centre, University of Reading, PO Box 229, Whiteknights, Reading RG6 6AG: Prescription book recipes for horses and cows 1791; 1945-50 (DX1328)

Wellcome Library for the History and Understanding of Medicine, Archives and Manuscripts Section, 183 Euston Road, London NW1 2BE: Thomas Roper Dodgson: apprenticeship indenture as chemist and druggist at Robert Willan's pharmacy in Ulverston, Lancashire 1884 (MS.8007/2)

Miscellaneous recipe book containing a collection of recipes, mainly medical, in formula format c 1800 (MS.7942)

Recipe book belonging to Thomas Chambre containing human and veterinary medical recipes with culinary and household recipes 1790 (MS.7942)

Recipe book compiled by Mrs Deborah Haddock incl culinary, medical and household recipes c 1720 (MS.7987)

Local Repositories in England

Derbyshire Record Office, New Street, Matlock DE4 3AG. Correspondence address: County Offices, Matlock DE4 3AG: Pharmacy, Ilkeston: ledgers 1857-71 (D5633)

Hertfordshire Archives and Local Studies, County Hall, Hertford SG13 8DE: Speechly & Milbank, pharmacists, Bishops Stortford: stock lists, photographs and historical account c1857-1959 (Acc 3831)

London Metropolitan Archives, 40 Northampton Road, London EC1R OHB: Howard & Sons Ltd, chemists (addnl): records incl accounts for Quinidine manufacture 1907-56 (LMA/4419)

North East Lincolnshire Archives, Town Hall, Town Hall Square, Grimsby DN31 1HX: R C Johnson Ltd (formerly Cook), pharmaceutical chemist, Cleethorpes and Grimsby: prescription books 1848-1982 (1177)

Plymouth and West Devon Record Office, Unit 3 Clare Place, Coxside, Plymouth PL4 OJW: A E Lee, pharmacist, Keyham: accounts 1960-80 (Acc 2765)

Southampton Archives Office, Civic Centre, Southampton SO14 7LY: Bates' Chemist, Swaythling, Southampton: prescription and account books 1937-93

The Record Office for Leicestershire, Leicester and Rutland, Long Street, Wigston Magna, Leicester LE18 2AH: Wand Manufacturing Co, Leicester: recipe books, price lists and notes 1911-2002 (DE6261)

Tyne and Wear Archives Service, Blandford House, Blandford Square, Newcastle Upon Tyne NE1 4JA: Atkins Ltd, chemists, Byker: records 1893-1997 (DT.ATK)

Local Repositories in Scotland

Dundee City Archives, 1 Shore Terrace, Dundee DD1 3BY. Correspondence Address: Department of Support Services, 21 City Square, Dundee DD1 3BY: James Gibson, chemist and druggist, Dundee: records incl prescription books c 1926-70

Local Repositories in Wales

Gwynedd Archives, Caernarfon Record Office, Victoria Dock, Caernarfon. Correspondence address: County Offices, Shirehall Street, Caernarfon LL55 1SH: O Gwyrfai Jones, pharmacist, Y Felinheli: records (XMl1355)

Powys County Archives Office, County Hall, Llandrindod Wells LD1 5LG: Unnamed pharmacist, Builth Wells: prescription books 1900-63 (B/X/117, Acc 1403)

https://doi.org/10.24355/dbbs.084-201802141340

DRUID AND HIGHLANDER.

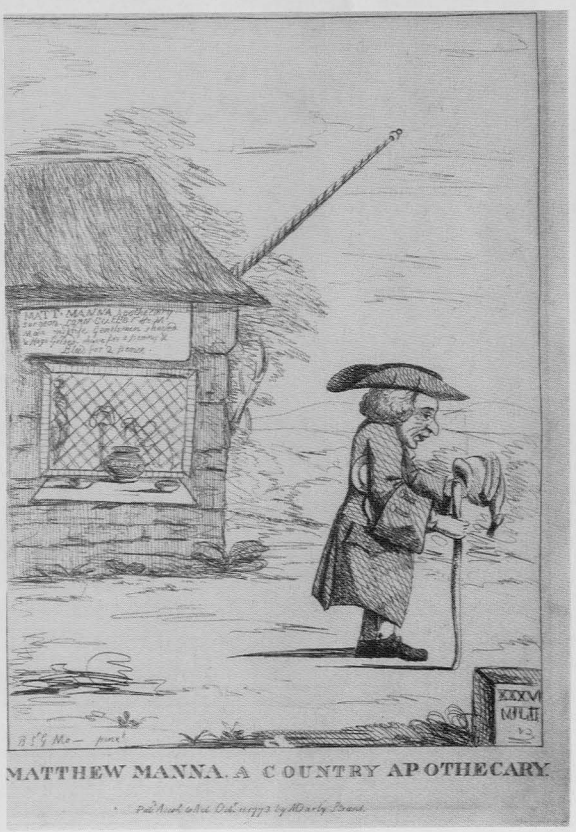
Printed and Published by W. Davison Alnwick.

Druid and Highlander by W Davison of Alnwick. Presumably 'Druid' is applied to somebody with healing or surgical skills. Note the small case of surgical instruments by his side. *From the collection of W A Jackson*

Postcards and greetings cards from the Museum

One of the range of 24 postcards and 4 greetings cards on sale on behalf of the Museum from the Library issue desk at 1 Lambeth High Street. All the cards show images or objects from the Museum's fine collections.
Reproduced with permission.

Right: '*Matthew Manna, a country apothecary*' by R St G Mansergh, published by M Darly in 1773. 'Gentlemen shaved and Hogs gelded'.



MATTHEW MANNA A COUNTRY APOTHECARY

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The Coat of Arms of the Royal Pharmaceutical Society of Great Britain on glass, near the entrance of the Society's Headquarters at 1 Lambeth High Street. The window was brought from the Society's former premises at 17 Bloomsbury Square, London WC1 in 1976. There it formed part of the entrance from the lobby used by candidates into the Examination Hall, used for the Society's Minor and Major Diplomas up to at least the 1930s. The Hall was used in the 1950s as a bacteriology laboratory by the School of Pharmacy and from 1960 was the Society's main meeting room. Courtesy of the Museum of the RPSGB.

 ISSN: 0079-1393

Typeset and Produced by Ralph Allen Press Ltd, Bath BA1 1UT

https://doi.org/10.24355/dbbs.084-201802141340

PHARMACEUTICAL HISTORIAN

Vol. 33 No.4
December 2003

British Society for the History of Pharmacy
840 Melton Road, Thurmaston, LEICESTER LE4 8BN

Founded 1967

https://doi.org/10.24355/dbbs.084-201802141340

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https://doi.org/10.24355/dbbs.084-201802141340

PHARMACEUTICAL HISTORIAN

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Diary

Wednesday 25 February 2004
Kevin Brown, Curator of the Alexander Fleming Museum, will speak on an aspect of the history of Penicillin at RPSGB, Lambeth

Wednesday 19 May 2004 Foundation Lecture
'G.P. Prescribing 1900-1930' by Prof. Anne Digby at RPSGB Lambeth.

2-4 April 2004
BSHP Annual Spring Conference will be held at **Cambridge.**
Details will be circulated to members in the New Year.

British Society for the History of Medicine
7 April 2004 Poynter Lecture 'Experimental lives: medicine and the Lunar Society 1760-1810' by Jennie Uglow at Wellcome Building, Euston Road at 3 p.m.

1-4 September 2005
Next BSHM Congress at Exeter.

Advance notice

Members are advised that the **37th International Congress** of the International Society for the History of Pharmacy will be organised by the British Society for the History of Pharmacy and is planned for late **June 2005** in **Edinburgh.**

36th International Congress on the History of Pharmacy, 24-27 September 2003 at Sinaia, Romania

Eight members of BSHP attended the Congress to see at first hand how the Congress worked and to help prepare for the next Congress in 2005, the first to be held in Britain for about 30 years.

The 36th International Congress on the History of Pharmacy was held in the mountain resort of Sinaia, some 2.5 hours drive north of Bucharest. It has a number of international hotels. A cable car from behind the Hotel Montana takes walkers in summer and skiers in winter to a height of 1400 metres and a further stage to 2000 metres to Mount Furnica. Sinaia was the summer residence of the Romanian royal family and their magnificent Peles Palace is open to visitors. Summer temperatures can rise to 30°C but during the conference were more in the 20-25° region.

The conference started with the General Assembly of ISHP followed by a reception and cocktail buffet. On Thursday morning the conference was opened by a representative of the Romanian President Ion Iliescu, followed by welcomes from the President of ISHP, Prof. François Ledermann, and the President of the International Academy of the History of Pharmacy, Prof. Wolf-Dieter Müller-Janke and the President of the Romanian Society for the History of Pharmacy, Prof. Ana Carat. The conference then followed the traditional pattern of a number of plenary sessions and short papers given in one of the three conference languages French, German or English.

The meeting of the Academy in the evening was held in Brasov, a major medieval trading centre with a famous central square and the Black Church, the largest Gothic church between Vienna and Istanbul. Friday evening saw the gala dinner in the Hotel International with local dancers and musicians in traditional costumes.

The closing sessions consisted of a discussion on the development of the teaching of the history of pharmacy from several countries. Peter Worling gave the Congress an invitation to the 37th Congress to be held in Edinburgh, Scotland on 22-25 June, 2005.

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Chemist Opticians

Neil Handley, MA AMA

Curator, British Optical Association Museum
The College of Optometrists

A topical issue at the moment is the possible granting of independent prescribing rights to optometrists. Optometrists were identified as potential candidates for the extension of this right at an early stage of the Review of Prescribing, Supply and Administration of Medicines, chaired by Dr June Crown, which reported in 1999 and led, after a consultation period, to the government's Health and Social Care Act (2001). As independent prescribers, optometrists would be able to deal immediately with minor eye problems the like of which they may encounter on a daily basis. If any pharmacist should regard this as trespassing on his own territory, the following account may act as a balance as it describes a body of twentieth-century pharmacists who sought for a while to practise as sight-testing opticians as well, something which eventually became impossible. To them, pharmacy was the superior profession and ophthalmic optics (the older term for optometry) was a mere 'sideline'.

The background to the founding of the Society of Chemist Opticians is best understood as a debate *within* the pharmaceutical profession as to the role of those of its members who also practised as opticians. Ophthalmic opticians had been developing as a profession in their own right since the 1860s and yet before 1895 lacked their own organisation equivalent to the Pharmaceutical Society.

Let us consider for example an article of July 1894 in *The Optician* magazine, itself a relatively new publication and more fully titled *The Optician and Photographic Trades Review*. The editorial, entitled the 'Sale of Chemicals by Opticians', is a response to the Pharmacy Act and an apparent attempt to butter up the Pharmaceutical Society for its discretion hitherto in the exercise of its statutory powers. The Society, it claimed, had exercised 'parental care' without becoming 'grandmotherly'. Opticians were clearly worried that some within the pharmaceutical profession might have sought to restrict access to various poisonous substances, both those used in medicinal drugs or those for photographic processing or of use to optical and scientific instrument makers; metal workers, for instance made use of cyanide which could be purchased from chemical dealers in large quantities. The article makes clear that the public and the government, acting in the public's name, might actually be favourably disposed to *increasing* the restrictions on the sale of such items whereas surely it was really the end users who should be restricted – the 'professional anarchist' for example, seeking to poison water supplies or manufacture high explosives.

In 1895 the British Optical Association was founded as the professional and examining body for ophthalmic opticians. The driving forces were Robert Sutcliffe and John Browning, an instrument maker who had drifted more towards sight testing in his old age. It was the staff of the association, notably John Sutcliffe, Secretary from 1900 until 1940 that made it a success. John Sutcliffe also edited the *Dioptric Review* and founded the BOA Museum and Library in 1901.

Within three years the Worshipful Company of Spectacle Makers, the ancient livery company which had been granted its charter in 1629 and which shared premises with the Worshipful Society of Apothecaries at Apothecaries Hall, had set up a rival examining function provided on a national basis and other examining bodies soon followed. In Scotland a body was founded in 1903 to represent the jeweller-opticians, the Scottish Optical Association. Closely allied to the Association of Goldsmiths in Glasgow this organisation wielded considerable political power. We can conclude from this that, given the lack of a unified professional body, still less one that targeted the concerns of pharmaceutical practitioners, the Chemist-Opticians were galvanised into forming their own body.

A Society of Chemist Opticians was founded in 1905. The Society was targeted at dual practitioners, but in order to acquire adequate members it agreed very quickly that all 'registered chemists' could join as 'Associates', but not vote or hold office. Furthermore, with the BOA and the SMC leading the way for examinations the Society decided not to become an examining body as well. Rather it was established to 'safeguard professional interests'. Nevertheless there were some similarities with the other bodies, not least in the intention to establish a library and museum. Ophthalmic opticians might well become members of the Society as well as one of the other bodies. The Society was for 'Pharmacist-Opticians' who were anxious to develop the education and training of entrants to the optical profession. In this we see their thinking: they would get their new members young and hopefully keep them for life. It was also established for all those who 'deplored' (a harsh word) the practice of a service relating to the visual welfare of the public being carried out by 'jewellers, clock merchants and others carrying out a trade of a similar nature'.

Not that the Society of Chemist Opticians was entirely opposed to the idea of opticians being traders. As retail chemists they could hardly have adopted such a position. In 1907 a lecture was organised in which Mr F.W. Mackinney spoke on '... Some suggestions for successful trading'. In any case they were campaigning against an entrenched position; the bulk of the British spectacle-making industry remained centred upon the Hatton Garden district of London (the centre of the jewellery trade) and would remain so until the 1950s. What in fact was happening was that a separate profession of dispensing optician was forming, and to a lesser extent a role of manufacturing optician. Many

https://doi.org/10.24355/dbbs.084-201802141340

opticians both tested sight and dispensed (and a few made their own frames, perhaps from real tortoiseshell) but it was possible to perform only the one function, particularly if you worked for one of the new optical chains such as J. Lizars of Glasgow, or Dollond & Co. (which became Dollond & Aitchison in 1927). In such practices both the main opticians' functions were performed under one roof but not necessarily by the same person. This reduced the number of individuals who might want to join a professional body for ophthalmic opticians, particularly one that offered no qualifications, certificates or affix.

Thus in 1922 (and perhaps also due to lessons learned in the Great War) the Society became an Institute and began examining. The examinations were only open to candidates who were already qualified pharmacists. It was possible to be a Chemist Optician, but never the other way round.

We return to our favourite optical journal, by now called *The Optician and Scientific Instrument Maker*, which in May 1922 carried an article that had also appeared in the *Pharmaceutical Journal* on 'The Chemist as Optician. Notes on Opening an Optical Department by a member of the Pharmaceutical Society'. It is a lengthy and revealing article and begins by describing sight-testing optics as a 'sideline' that had been a profitable and interesting 'adjunct' to many a pharmacist's business for the last twenty-five years. More condescendingly still the author implies that a pharmacist is peculiarly fitted to undertake such work having been scientifically trained, being able to master the underlying principles and, importantly, already possessing the confidence of the public. Then, however, the writer changes tack. He refers to an optician of such experience and skill that even 'medical men' of the district (note the distinction) send patients to him and, moreover, visit him themselves. He explicitly recommends the pharmacist thinking of moving into optics to take the exam of the BOA or the SMC. (This is rather ironic since the SMC actually required the holders of its diplomas to sign a form agreeing not to use drugs in their work! This stance was not abandoned until 1938.) Within months he would probably have recommended the exams of the new Institute of Chemist Opticians instead. He offers advice on the layout of the practice. The optical department should be on the same level as the pharmacy in case elderly patients cannot mount stairs or require to be wheeled in whilst seated in their bath chairs. Nevertheless the room need only be small, possibly as small as 10ft long and a converted corridor will do. To this author a minimum of equipment is required, a good trial case being sufficient in most cases. He goes so far as to suggest that 'many opticians keep a good show of instruments for "swank" and with the idea of impressing their clients'. Notably he cautions against maintaining a large stock, (indeed any stock) of frames and lenses, advising instead that pharmacist opticians order frames on a per client basis, even thought this means increased postage costs, and he states that lens grinding is not a practical proposition for the pharmacist optician and such work should be contracted out to prescription houses. He advises instead that the pharmacist optician make up for this extra cost and inconvenience by becoming a specialist, for instance in frame fitting. He should also exploit his position as a pharmacist to attract the clients in the first place:

> The Pharmacist enjoys unique opportunities for pushing optics, opportunities unknown to those who rely upon their optical qualifications alone. Every day customers enter the pharmacy who can be looked upon as potential optical clients. A lady mentions the fact that she suffers with headaches. A tactful conversation leads to a visit to the sight testing room and the discovery that she is suffering from a slight error of refraction.

This predatory attitude to the public does not sound attractive nor does it tally with the high ideals of the Society of Chemist Opticians when it had been founded in Edwardian times. In 1924, various letters to the *Chemist and Druggist* journal reveal that the nature of the renamed Institute of Chemist Opticians, now over a year old, was baffling some pharmacists. For instance J. Harcombe Cuff wrote in with a spirited defence of the old Society's policy – that it was to protect the rights of all Chemists who were opticians, whether qualified or not; that as a small society that, uniquely, offered no salary to its officials it was never likely to appoint examiners of the quality of say the BOA and so it was its policy to recommend its members to take the exams of those bodies. The editor helpfully told readers that the Society had been founded in 1904 (incorrect) and that a list of members was published annually in the *Optical Almanac*. A second letter, from J.J. Laws, one of the original founders, defends the new Institute, pointing out that the qualifying examination of the Pharmaceutical Society already contained the elementary teaching of optics and it was logical to seek to build upon that. This time the editor had to report that the 'Institute' was 'apparently of recent growth. There is no mention of it in any optical reference book nor in the Educational Number of the *Chemist and Druggist* which for many years has dealt with optical qualifications'.

Notably the first of these letter writers, Mr Harcombe Cuff, had claimed that 'Chemists by their scientific training generally make the best opticians from the point of view of sight-testing, and if they will throw their support on the side of unity and the recognised examining bodies they can greatly help the movement for a still higher standard of optical education'. Leaving aside the biased opening statement we can discern in this a recognition of what would be the over-riding theme of the next thirty years – a push for unity which alone would persuade the government to legislate for the compulsory registration of opticians.

How likely was unity in the period before the NHS? Not very likely it would appear. F.G. Howell, who

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had passed the examinations of both the BOA and the SMC (which was a common combination) wrote an article in October 1945 on the age-old theme of whether ophthalmic opticians should have window displays. Fulminating against them he asks the rhetorical question: 'Do we ... elect to choose pharmacy as our ideal of professionalism?' The implication is plain. Opticians are not salesmen, pharmacists are. Opticians are proper professionals, like solicitors, accountants and architects or even (to include a medical example) dentists, none of whom would ever dream of advertising and whose clients come to them by reputation alone. Pharmacists are shopkeepers who might be subject to inducements to push certain manufacturer's products.

Set against this negative view is the account of the Institute's annual dinner in 1947 at which the Secretary of the BOA proposed the toast, the President of the Institute (a surgeon) spoke warmly of a 'triangle of forces' – medicine, pharmacy and ophthalmics – and Mr G.A. Mallinson, qualified under both the Pharmaceutical Society and the Spectacle Makers Company as well as being secretary of the National Pharmacists Union, supposedly spoke for all when he said that unity and co-operation would grow and strengthen the value of both optics and pharmacy to the general public. He ended 'We have far too many separate bodies' and he wished that 'there were only one – so long as the other is the Institute of Chemist Opticians.

No matter how well they could socialise together the various bodies were nevertheless in competition with each other for members' subscription and examination fees. The advent of the National Health Service changed matters again.

From henceforth the Institute accepted non-pharmacists and its name was changed yet again to the Institute for Optical Science (IOSc). The loss of the name 'chemist' from its title was significant as in time it would become just another opticians' association and not one of the stronger ones. At the time of its foundation in 1948, however, the Institute of Optical Science was determined to maintain the dual profession identity. Its motto was *Utrumque ad paratus*, basically to be prepared on both sides, and its emblem was a pestle and mortar alongside an optician's trial frame.

Some new members from exclusively the optical side were still unsure that the Institute treated both sides equally. The Committee minutes record the receipt of a letter in 1953 from F.R. Hinton asking if the IOSc had in fact *narrowed* its field of interest to representing pharmacists alone. He received a reply to the effect that it had always been the Institute's policy (i.e. since 1948) to 'especially put forward' the Pharmacist Optician point of view ... and that is what the Joint Examining Committee (on which the IOSc was represented along with the BOA, SMC, NAO, and SAO) was looking for.

In 1949 the Institute for Optical Science had 1636 members. Whilst these need not necessarily be pharmacists they did have to be 'engaged in a profession acceptable to the Council'. In reality this opened the way for membership of a number of medical practitioners, ophthalmologists (including the distinguished Dr Margaret Dobson) and physicists. A future secretary of the Institute, Reginald Goode, would nonetheless describe the membership as a 'creative minority'. A school was opened at Wilton Crescent offering evening classes in premises rented from Obrig Laboratories, an important company in the contact lens field. The Institute offered a Diploma in Ophthalmics for which Part 1 could be obtained by various routes including Part 1 of the Chemist and Druggist examination of the Pharmaceutical Society or an equivalent, two subjects of which must be chemistry and physics. Part 2 however was entirely ophthalmic or medical in its nature and content. To obtain the fellowship entailed sitting for six topics including ocular pharmacology and bacteriology. At this time the Institute was the only examining body to include ophthalmic surgeons on its Council and on examining panels. This was very much the hobby-horse of the Censor of exams, Professor H. Hartridge, but the Joint Examining Committee (JEC) strongly disapproved.

Members of the Institute (especially if they were qualified pharmacists) were allowed to use cycloplegics and mydriatics, but were advised to consult the patient's medical practitioner before doing so. Cycloplegics fix the dilation of the pupil. Atropine or a similar antimuscarinic drug induces paralysis in the ciliary muscles of the eye, which can be useful when the iris or ciliary body is enflamed. Mydriatics widen the pupil, mimicking the effect of dim light. Some sympathomimetic drugs bring about mydriasis but not cycloplegia by stimulating the ciliary muscles. Such drugs included cocaine and ephedrine. Similarly if Members of the Institute were fitting contact lenses with the use of drugs, an ophthalmologist was to be consulted first. Fluorescein was useful in this respect. This is a water-soluble orange dye that can be applied by strips and which glows a brilliant green when blue or ultraviolet light is shone upon it. It can also be used in a dilute solution to detect defects on the surface of the cornea and can be injected into a vein for use in retinal angiography – the results being captured with a retinal camera. The Institute set up research groups on the effects of antihistamines on vision and the effects of sex hormones on vision. Reflecting the spirit of the age as well as its long-held hatred of jewellers, the Institute was also opposed to the idea of any of its members being engaged in 'occupations not associated with the NHS'.

It began to encourage all its members to join the Association of Optical Practitioners (AOP), in effect the trade union for the profession, which shared its premises and most of its staff with the British Optical Association in 65 Brook Street. It was felt that the AOP offered the best means of acquiring the unity required to establish a strong protective body along the lines of the BMA or the National Pharmaceutical Union.

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In May 1950 the Insurance and Companies Department of the Board of Trade questioned the right of the IOSc to represent all optical science. It suggested a change of name before it would offer registration as a company. This was fought off, though not without difficulty since the NHS Act of 1946 had been strict and rather simplistic in its definition of opticians (those who tested sight were Ophthalmic Opticians and those who supplied optical appliances were Dispensing Opticians) and the IOSc was claiming something much more: that it represented 'the ophthalmic and allied optical services', the latter group of which included medical practitioners who were supposedly the preserve of the General Medical Council.

The difficulties continued. It became apparent that the Institute was losing its student members, some to other examining bodies and others because they had decided not to pursue an optical career. The Institute's journal was delayed and cut down, local branches were no longer financed and the corporate diary was cancelled.

In 1950 a lecture programme was run. Gilbert Harding of radio's *The Brains Trust* spoke on 'How to enjoy the Arts, without knowing too much about any of them' and there were also lectures on astronomy, personalities and Professor Pear on 'Mental differences between the sexes'. As the lectures were open to the general public the word 'scientific' was deliberately dropped from the title of the programme, but it is not difficult to see why some must have felt the series was scarcely relevant to the Institute's true purpose and the cost was prohibitive after 1951. Incidentally, Gilbert Harding appeared in printed advertisements for the Hadley Optical Company asking 'What's My Line? – Trulyne', one of Hadley's frame styles.

That year there was a rumour that George Giles, Secretary of the BOA had persuaded the other examining bodies not to employ anyone associated with the IOSc. Giles had supposedly hinted to a staff member of the Northampton Polytechnic (now City University) that if he resigned from the teaching college of the IOSc he would try and get him a job at the London Refraction Hospital (now the Institute of Optometry on Newington Causeway). I have been unable to trace the end of this story.

In March 1951 the Inter-Departmental Committee on the Statutory Registration of Opticians chaired by Lord Crook, summoned the IOSc seeking to know why they felt a need for their own body and to what trades they felt objection. The Institute gave an illustration of an optical department at one Co-op branch which was part of a section selling boots and shoes. The Scottish Association of Opticians had criticised it (implying that perhaps it was missing out on members north of the border to the IOSc). The SMC had criticised it, but the Institute countered that its exams were harder and therefore more worthy.

In November a member, Mr A.C. Finlay, appealed in desperation to the Council because his local Labour Exchange would not recognise his qualification. It turned out they still had not heard of the name change. In January 1952 an approach was made to the National Association of Opticians with a view to amalgamation. The NAO turned them down saying the time was 'not propitious'.

Was there any good news for the Institute? Standards were acknowledged to have remained high. One candidate who had already passed the NAO diploma with flying colours but was also sitting the Institute's diploma came out of the room and told the examinations inspector that the Diploma in Optics was surely the 'coming' examination. The inspector's report noted in wry fashion that 'I am sure he will be confirmed in that opinion when he learns that you have referred him in one subject'. Then the Crook Report was issued and the Institute was jubilant because the report had come out firmly in favour of the use of surgeons as examiners.

In the early to mid fifties amalgamations were temporarily off the agenda when it became apparent that fewer examining bodies would lead to a reduced number of ophthalmic optician representatives on the envisaged General Optical Council. Pharmacy seemed to have little place in the forthcoming new order. In October 1954 the BOA dropped the study of chemistry, maths and physics from its first year exam syllabus preferring in future to stipulate these subjects only as a pre-professional requirement. In September 1955 the IOSc cancelled its proposed course in Ocular Pharmacology after only five enquiries had been received and two sets of fees paid.

In the run-up to the passing of the Opticians Act (1958) and the final establishment of the General Optical Council (1960) it became clear once more that there were too many competing bodies. In 1956 the NAO was finally subsumed into the BOA. In July 1957 Mr R.A. Baxter, a council member of the IOSc who had also been elected Vice-President of the BOA, found the pressure of serving two bodies too great. Significantly it was the IOSc from which he chose to resign. The writing was on the wall. In September 1957 the Examiners Report noted that a majority of candidates had already passed the exams of other bodies. That year a joint committee of ophthalmic opticians was established. Whereas the BOA and the SMC had three seats each, the IOSc and the Scottish Association were given only two. This lack of parity was a source of grievance but in part reflected the Institute's own habit of seeing itself as both in optics and yet apart from it. An internal report comparing ophthalmic optics with pharmacy had drawn the following conclusions:

- That to practise as a Pharmacist required membership of a professional body including the payment of a retention fee and adherence to a code of ethics, but this was not the case in optics.

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- That, unlike optics, pharmacy was not a profession that initiated a health service. (21st century pharmacists might well not accept this assessment).
- That although pharmacy was still attracting rising numbers of university graduates, it offered lower rewards as a profession than optics. It was perhaps more lucrative to specialise in optics alone.

In May 1958 the IOSc agreed to sponsor an Association of Optical Practitioners' lecture by Cecil Flick but made a very revealing comment in the process, saying that as an 'educational body' it would really have preferred a lecture by an ophthalmic surgeon. This concerning one of the foremost figures in ophthalmic optics of the day, a prolific and distinguished author, lecturer and course organiser!

The proactive, voluntary secretariat was somewhat aged by now and in 1962 the inevitable happened, although quite suddenly in the event, negotiations having begun in April and the outcome being reported by the summer. Officially the Institute was amalgamated with BOA. It had already been sharing premises since its base at the College of Preceptors had been threatened with demolition. In practice it was entirely swallowed up and no trace remained except that for the first seven to ten years the BOA Council was to include three pharmaceutical representatives. Furthermore a Pharmaceutical Optics Committee was established which broadened the activity of the BOA and did much work on the optical side-effects of drugs.

The day of the Chemist Optician was over, though of course some individuals continued to practise in both fields. Indeed the ex-Institute men argued that there was no need for their organisation since it had already achieved its primary aim ten years earlier when the Crook Report had recommended that:

1. There shall be no objection to registered ophthalmic opticians practising pharmacy and that
2. the pharmacist optician would be allowed to practise his two chosen professions.

The Optician journal continued to carry articles on the use of drugs in ophthalmics and to report regularly on issues in the pharmaceutical press. Take this report from December 1961:

> Instead of the more usual type of lecture on drugs, Mr Meakin gave a lecture which he admitted should have been given to pharmacists, but as many points were so important, he felt it was essential that opticians should have some knowledge of them.

This lecture concerned the need for sterility in ophthalmic solutions and likewise during the application of fluorescein and during contact tonometry (in which the internal pressure of the eye is measured, one of the principal tests for glaucoma). Mr Meakin also discussed germicides, the storing of drugs and coloured label codes.

A year later Mr W.J. Porter was able to argue that 'opticians are better trained than many medical men who are not compelled to take examinations in drugs'. If you think this sounds like an ex-Chemist-Optician talking you would be right, but he is now advocating the cause of all opticians. His lecture concerned the use of drugs in refraction where one of the main difficulties was maintaining the sterility of eye-drops for any length of time – the modern solution he recommended was the 'Minim' single-dose disposable container marketed by Smith & Nephew Pharmaceuticals Ltd. He then spoke about local anaesthesia, contact lens wetting solutions, emergency saline and the healing effects of cod-liver oil.

In 1972 Kenneth Harwood, a distinguished BOA councillor from a respected optical dynasty co-authored a careers guide for young people called *Field Of Vision* in which he explained the life of an ophthalmic optician as well as his own somewhat atypical experiences doing such work on Ascension island and St Helena. In it he points out that the first register of the General Optical Council (published 1959) had contained 7000 names but that 'quite a number of these' were also pharmacists who divided their time between pharmacy and ophthalmic optics. Harwood comments that this was a useful combination for the service of patients in the average small town between the wars. I think we can draw from this the implication that it was no longer considered (at least from the optical side) as an appropriate combination for the career entrant. Dispensing optics was perhaps a different matter. In 1977 BBC School Television transmitted a programme entitled 'A Job Worth Doing? Dispensing', which looked at the work of young people in two jobs under the umbrella title of dispensing, one a dispensing optician, the other a pharmacy technician. In fact, apart from the title, there was little to connect the two roles. Pupils who watched that programme will be in their mid-forties at least by now. Much has happened since.

In 1985 advertising restrictions on optometrists were relaxed and shop window displays became commonplace. Henceforth their practices became much more like retail businesses. The big four chains developed: Dollond & Aitchison (the only well-established firm); Boots Opticians (founded 1987); Vision Express (an offshoot of the French parent company GrandVison); and Specsavers (really a series of franchises, founded on Guernsey in 1984 but which has expanded dramatically in the last three years and is now a 'superbrand' according to national economic monitoring bodies). All four giants bought up many of the established optical names: Clement Clarke, Lancaster & Thorpe, C.W. Dixey, Theodore Hamblin etc. Recently some new names have come on the scene attempting to offer a pan-healthcare service, optometry, other eye services such as laser surgery and therapies from chiropody and dentistry through to reflexology and aromatherapy – the Health Clinic has been one of the fastest growing and fastest to fall.

The Pharmaceutical Society had become the Royal Pharmaceutical Society. The British Optical Association amalgamated with the Scottish Association of Opticians and the examining faculty of the

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Worshipful Company of Spectacle Makers in 1980 to form what was called the British College for Ophthalmic Opticians (Optometrists) – surely the worst title for a receptionist to read out on the telephone (and they had to, in full!). Several founding Fellows were also Fellows of the Pharmaceutical Society. The BOA Museum recently accepted some equipment from one such dual fellow, Mr Henry Percival Southcott, not just his trial case but also his pill making machine and roller.

A short while later the Worshipful Company began offering optical technician courses. The British College received a royal charter and became simply The College of Optometrists, shortly to adopt the royal prefix. In 1986 a separate Association of British Dispensing Opticians (ABDO) was formed when its two predecessors, The Association of Dispensing Opticians and the Faculty of Dispensing Opticians, were merged following the Health and Social Security Act of 1984. Since 1999 ABDO has operated its own Training College at Godmersham mansion near Ashford.

Some wonder if a common educational faculty between the two Colleges will result. To combine the two distinct branches of optics would be major exercise in itself. The thought men once had of combining that work with pharmacy as well is now confined to history.

This paper was presented at a meeting of BSHP on 7 May 2003.

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Dusanka Parojcic, co-author of the adjoining paper, at the ISHP Congress in Sinaia

The First State-run Pharmacy in 19th-century Serbia

Dusanka Parojcic and Dragan Stupar

The Serbs had been officially permitted to establish their own health facilities by a decree of the Ottoman Empire called 'Hattisherif' in 1830.[1] After independence was gained and sovereignty established, the first pharmacy was opened in the same year. That was the municipal pharmacy in Belgrade, opened and run on the basis of a licence by Mateja Ivanovic, the Serb from Zemun (then an Austrian province, now in Serbia).[2] Six years later, in November, 1836, a state-run pharmacy was opened by a State Senate order and the prince Milos Obrenovic's permission.[3] It was situated in Kragujevac, one of the three capital cities of the Prince Milos' Serbia, the city that used to be a very important political and military site of the Obrenovic dynasty.[4] The State Archive records show that this apothecary moved to new locations in Belgrade several times, first temporarily, for eight months in 1839/1840, then finally, on December 8, 1841.[5,6,7] Interestingly enough, at the beginning of November 1842 it was moved to the near vicinity of the other one, privately owned, which enormously affected the business of both of them.[4]

At the beginning it was called the Royal and Military Pharmacy (Dvorska i voena) but soon it changed its name to the Court Pharmacy (Pravitelstvena apoteka).[4] It was the first state-run pharmacy and one of the most important health facilities during the course of the 19th century in Serbia. From this apothecary all the hospitals (military and civil), high schools and lyceums were supplied, and drugs and medicines were dispensed to physicians for their travelling and medicine chests.[8,9] The Royal family and the court officials also used the services of this apothecary like many other citizens all over the country.[10,4]

Belgrade Court Pharmacy: the first state-run pharmacy in Serbia

The founder and the chief Court Pharmacist was Pavle Ilic, an outstanding name in Serbian pharmacy. He was born in 1807 in Vojvodina and came to Belgrade in 1834, in order to apply for a state scholarship to finish his studies at the Budapest School of Pharmacy.[4,11] (Fig. 1) He was granted the scholarship and this is also the first record of the Prince Milos Obrenovic scholarship award. In 1835, after graduation in Budapest he came back to Serbia and signed a contract to become the first pharmacist employed by the government.[12] There is a record of a letter signed by Prince Milos in 1837 to Magister Ilic that testifies that he was the first person to be referred to as the government-employed pharmacist.[13] He was tasked with all the preparations necessary for the foundation and organisation of the Court

https://doi.org/10.24355/dbbs.084-201802141340

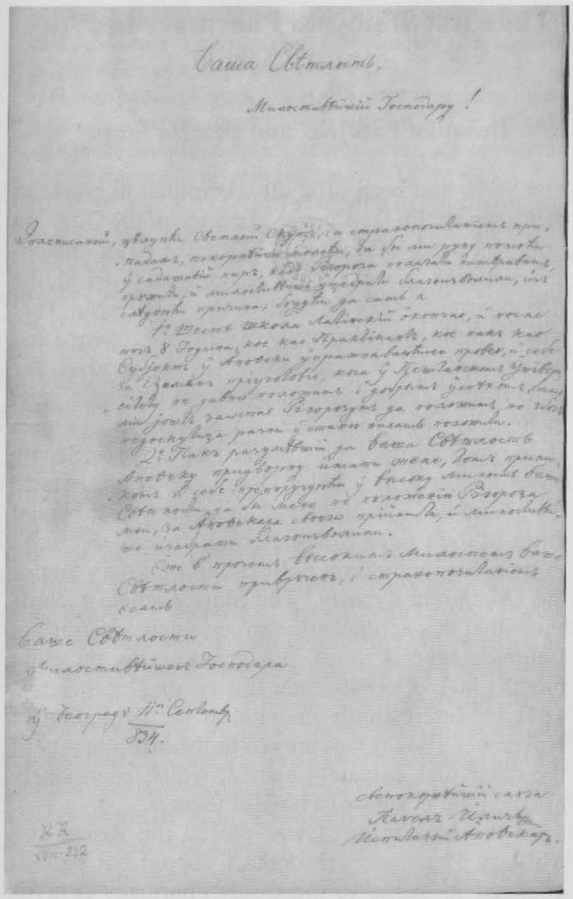

Figure 1. The original document dated September 11, 1834, showing that the first Serbian State Pharmacist Pavle Ilic, was applying for a scholarship to finish his pharmacy studies in Budapest. (Courtesy of SAS)

Pharmacy in Kragujevac.[4] Later on in Belgrade, he had to find a suitable house with a shop for the dispensary there. The furniture and pharmaceutical equipment for the officina, store room and laboratory were brought from Vienna and Budapest and cost 691 talirs.[14] Among 15 items there were also distillation apparatus, pill machines, wooden herbal boxes, brass boxes, and various glass vessels.[15] Medications and drugs of the best quality were ordered from Austria too.[16] It was an illustration of the government's concern for public health and the new Prince Mihailo Obrenovic's intention to enforce scholastic pharmacotherapy rather than folk medicine.

Some of the original equipment and inventory of the Court Pharmacy is preserved today and kept as a part of the Collection of the History of Pharmacy Museum in Belgrade. Very few are left as rarities in the Macedonia Pharmacy. The Museum owns 137 cylindrical porcelain jars with the conical lids that originally decorated the officina of the first Serbian state-run apothecary. Many wooden hand-made jars covered with lids are preserved as well. Those were for storing solid materials, dried drugs and powders, and had decorations limited to the inscription. (Fig.2)

Figure 2: Cylindrical porcelain jars with the conical lids that originally decorated the officina of the Court Pharmacy in Belgrade (History of Pharmacy Museum in Belgrade)

Court Pharmacist Pavle Ilic

Magister Ilic became an appointed member of the State Medical Board and worked as a pharmacy administrator with the Medical Department of the Ministry of Internal Affairs. He was officially in charge of the inspections of all the privately owned municipal apothecaries in Serbia, and every fourth year he inspected the physicians' portable medicine chests.[17,18] Very diligent, hardworking and extensively educated, he succeeded in proving that a pharmacist is at the same time a chemist, i.e. that he is able to do both jobs. At that time Serbia was introducing a new era of modern pharmacy business involving more chemistry. The Court Pharmacy's laboratory was well equipped for different toxicological and chemical analyses, and the State Senate issued an official order that all analysis for military or civil purposes should be performed there.[19] Various documents dated from 1839 to 1859 mention different chemical analyses conducted mostly by the State Pharmacist Ilic himself, especially for court and police purposes, in cases of poisoning and murder. It was in one of the murder cases that he analysed that he thoroughly described, using Serbian language, the arsenic detection method, better known as the Marsh test.[20,21]

Pavle Ilic was also the first to test the mineral spa waters of Serbia, in the back rooms of the State Pharmacy's laboratory. His 1837 report of the composition and therapeutic values of water from two springs of Bukovicka banja is the oldest chemical analysis done in this field, preserved in Serbian language. Before the establishment of the Court Pharmacy mineral spa waters were sent for analyses to Vienna.[22] In his book about Serbian health facilities of the 19th century, the prominent doctor Emerich Lindermayer, who was once the head of the Medical Department of the Home Office, referred to the official list of forty different mineral spa waters analysed by the state pharmacist from 1836 to 1855. This resulted not just in reducing expenses for

https://doi.org/10.24355/dbbs.084-201802141340

analyses made abroad, but established the Court Pharmacy's reputation and introduced chemical practice as a part of its pharmaceutical services. That clearly tells us about the enormous popularity of such places as sanatoriums and cure resorts of that time.[20]

Working as chief pharmacist of the Court Pharmacy in Belgrade Pavle Ilic had an annual salary of 800 forints in silver.[14] Not surprisingly, after his apothecary's post, he became the first state chemist of the newly established State Chemical Laboratory on October 21, 1859, in Belgrade. As a State Chemist he earned 600 talirs each year and held that position until his death on January 23, 1871.[20,23] During the course of winter and spring of 1863, as a state chemist, he was an active member of the Pharmacopoeia Commission, which prepared the first Serbian Military Pharmacopoeia entitled *Serbska voena Farmakopeja 1863*.[24,25]

Branch Court Pharmacy in Kragujevac (1853-59)

During the whole period of its existence, the Court Pharmacy was state-run with three pharmacists and a few apprentices and laboratory assistants. Besides the chief, Magistar Pavle Ilic, there were one pharmacy assistant with 400 forints in silver and two apprentices with the salary of 288 forints in silver.[4,14,26] It is very likely that this pharmacy and its personnel, compared to all other health facilities, was in a privileged position, concerning its financial management and medicine supply.

Regardless of the change of the royal dynasties of Serbia,[27] the Court Apothecary was operating normally and even extended in 1853 by opening a branch in the city of Kragujevac. On March 14, 1853, by decree of the Home Office and the Prince Aleksandar Karadjordjevic of Serbia, the Branch Court Pharmacy was registered as a special state-run apothecary, subordinate to the main apothecary in Belgrade.[28,29] Judging by the archive data, it was organised and run on the same principles as the Belgrade Apothecary, with the State Pharmacist Pavle Ilic in charge at first for all the necessary supplies.[30,31] He also suggested that Djordje Bogdanovic, who was a pharmacy assistant in the Belgrade Court Pharmacy, should be appointed the chief pharmacist in Kragujevac.[32] Our investigation showed that he had already been officially assigned to the post on June 1, 1842, when the idea of a branch pharmacy in Kragujevac failed.[33] At last for his education, good qualifications for practical work and long loyal service at the Belgrade pharmacy, Magister Bogdanovic was promulgated on May 5, 1853.[34]

Before taking the post, he was obliged by the contemporary law to swear an oath stating that he would follow ethical principles in everyday life as well as in carrying out his professional duties. The oath for a pharmacist was the usual ethical guidance for the apothecary in Europe, and in Serbia it was taken by the representatives of the Orthodox Christian Church, medical and city authorities. The original document of the pharmacist's oath (Fig. 3) was taken and signed by the pharmacist Djordje Bogdanovic, dated November 2, 1853.[35,36]

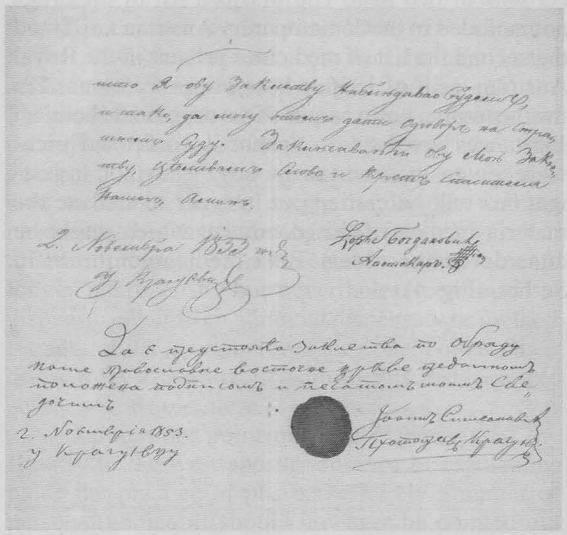

Figure 3: Apothecary's oath. This fragment of the original document is the apothecary's oath taken on November 2, 1853 by Djordje Bogdanovic, when he was promulgated the Court Pharmacist of the Branch Court Pharmacy in Kragujevac. (Courtesy of SAS)

Pharmaceutical legislation

As we can judge from the records, a pharmacy of that age in Serbia was tremendously influenced by the Austrian system, not just in furnishing and fitting but in its running as well. Preparation and dispensing of medicines were done following the Austrian pharmacopoeias and medical tariffs (*Pharmacopoea Austriaca 1855*, *Taxa medicamentorum* in *Pharmacopoeae Austriaca editione quatre contentorium*, 1836, 1855).[37] In February 1845, the State Council introduced the first pharmaceutical Regulations for Community Pharmacies (Pravila za javne apoteke) and a similar one for Managing the Court Pharmacy (Pravila o rukovanju i manipulisanju Pravitelstvene apoteke). The second one was used to introduce the separate legislative act for Managing the Branch Court Pharmacy (Pravila o rukovanju Filijalne Pravitelstvene apoteke), on October 15, 1853. The original documents referring to the adoption and enforcement of the Regulations for Managing the Court Pharmacy in Belgrade and the Branch Court Pharmacy in Kragujevac are well preserved today and kept in the State Archive of Serbia.[38,39] The 1845 Regulations for the Belgrade Court Pharmacy comprised 11 articles, one referring to the 1836 Austrian medical tariff being still in effect; the supplementary medical tariff list for the drugs and remedies which were not included in the previous one was also mentioned. This supplementary medical tariff of 1845 has recently been found by D. Parojcic

https://doi.org/10.24355/dbbs.084-201802141340

during the course of her research at the State Archive of Serbia in Belgrade. The original six-page document dated February 23, 1845, issued in Belgrade by Ilija Garasanin, the Minister of Internal Affairs, consists of two lists. The first is a list of the drugs not included in the contemporary Austrian tariff, and the second the list of medicines present in the Royal Austrian tariff of 1836, whose prices were raised in the meantime. Latin names of the drugs and chemical substances were listed in alphabetical order and prices were given in Austrian money.[40] Further investigations will be carried out in order to analyse the materia medica of this document which might be considered the oldest Taxa medicamentorum in Serbia. (Fig. 4)

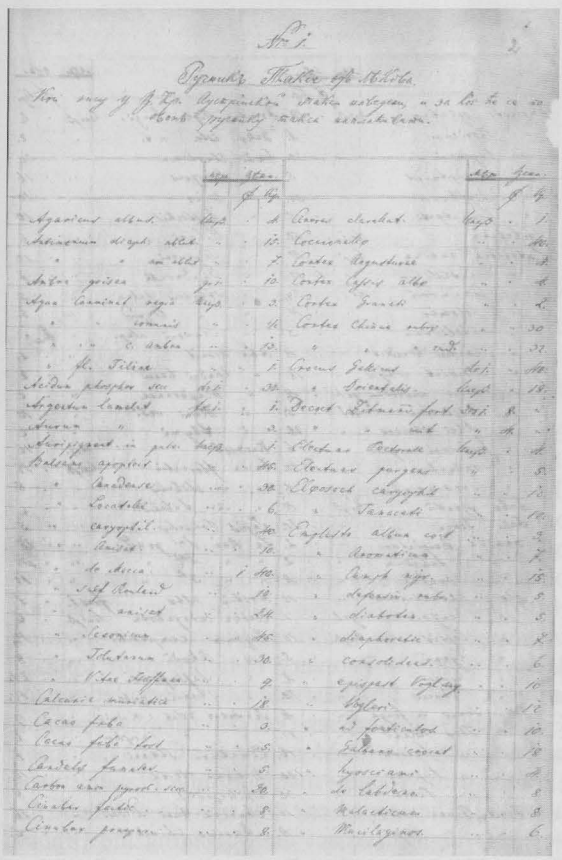

Figure 4: The 1845 supplementary medical tariff list for drugs not included in the Austrian Taxa medicamentorum of 1836. This was issued for the Court Pharmacy in Belgrade, together with the 1845 Regulations for Managing the Court Pharmacy. First page of the original six-page document. (Courtesy of SAS)

Due to some financial problems, the Court Pharmacy was sold to a private individual along with the furnishings and laboratory equipment on June 10, 1859, by the decision of the State Senate and the Prince Milos Obrenovic.[41] The Belgrade pharmacist Teodor Sekulic was its next owner. At the turn of the 19th century it passed through various hands until the 1949 Nationalisation Law when it became a part of the 'Pharmacist Institution Belgrade' under the name of 'Macedonia Pharmacy'.[42] Before that it was renamed 'Pharmacy at Serbian Court of Arms' and 'Hilendar Pharmacy'. It also changed to the new location where it is still situated today, in 36 Makedonska Street, Belgrade. [43] There were several suggestions made by Prof. Stupar to rename this historically important pharmacy after its founder Pavle Ilic, but all went unnoticed.

In conclusion, various documents concerning the state-run apothecary in 19th century Serbia clearly show that the Court Pharmacy played a significant part in supplying drugs, distribution of medicines and health protection in Serbia; its founder, Pavle Ilic, influenced the emergence of applied chemistry into the field of apothecary practice. Finally, some further research should be carried out on the taxa medicamentorum issued for the Court Pharmacy in 1845.

Acknowledgment

Dusanka Parojcic is very grateful to the archivists of the State Archive of Serbia (SAS) as well as to their former colleague, Mr. Ljuba Popovic, for valuable assistance throughout the course of her research and visits to the Archive.

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This paper was presented at the 36th International Congress of the History of Pharmacy in Sinaia (Romania), September 2003.

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Review

Drugstore Memories: American Pharmacists Recall Life Behind the Counter 1824-1933

Glenn Sonnedecker, David L. Cowen, Greg J. Higby (Eds). American Institute of the History of Pharmacy, Madison, Wisconsin, 2002. With bibliography, author index, dates of the writers. pp. 146. ISBN:0-931292-38-7 (No price given).

The book is divided into two sections with separate introductions, covering 1824-1860 and 1860-1933, pre and post Civil War, and 59 accounts are given. Probably the first thing one notices is the appalling hours worked by many, one woman pharmacist working from 8 a.m. until midnight in Philadelphia. She did not even become a citizen of the U.S.A. until 1927. Salaries were low even for a graduate of the University of California College of Pharmacy in 1931, such as W.B. Rumford Sr. (1908-86); his first work was parking cars at night whilst still attending college, but he was able to buy the pharmacy in 1943.

As far as is known, the first of the pharmacists to arrive in the future USA seems to have been Robert Cooke who arrived in Boston in 1638. We have little idea of his type of practice but there is no doubt that it changed considerably over the centuries. A practice which seems to have come from England was the dispensing doctor. The hierarchy in the United States would seem to have been: the 'physician' who diagnosed and had his apprentice compound and dispense his medicines; then there was the man termed an 'apothecary', but who we would term a General Practitioner and in nearly all cases was scarcely to be separated from the General Practitioner; then we have the 'Druggist' who was in fact a wholesaler and a retailer; the next in the scheme of things was what we would call the Pharmacist but who sold, if there was a demand for them, both pharmaceutically related and unrelated goods. Finally there was a general merchant who also sold medicines. In due course the druggist and the pharmacist became indistinguishable.

Some 'physicians' in the course of time were no longer pharmacists, but nevertheless continued to dispense, either from a limited dispensary or on their rounds, whilst in urban areas they could obtain their drugs from a pharmacist who in this instance was acting as a wholesaler.

As the authors point out, the expansion of the country to the west and the absence of regulations made the practice of pharmacy purely a matter of personal choice. It should however be pointed out that regulation of pharmacy, as well as medicine and dentistry, became essential in the state of Louisana because it had once been a French colony. By 1852 this exemption had been repealed, which we now realise was a retrogressive step.

The usual mode of entry to pharmacy was by the apprenticeship, but this was of course very dependent on the owner's abilities. Nevertheless, the Philadelphia College of Pharmacy opened in 1821 and thus began theoretical as well as practical instruction. Soon after the American Civil War four more colleges followed whose standards were rather variable. This training was of course in addition to the apprenticeship, though in many cases the apprenticeship was much shorter than in Britain.

The first edition of the *U.S. Pharmacopeia* dates to 1820 but was really compiled for doctors rather than pharmacists, whilst the *Dispensatory of the USA* appeared in 1833. The most useful book from the pharmacist's point of view was William Proctor's translation of Theophilus Redwood's translation of Friedrich Mohr's work, which was followed in 1856 by Edward Parrish's *Introduction to Practical Pharmacy*.

There would seem to have been in America no equivalent of our Proprietary Articles Trade Association although attempts were made. 'Patent', or more exactly Proprietary, medicines regrettably also crossed the Atlantic in the middle years of the 18th century and flourished for many a long year. To the same, or even greater degree, they have the same problems with so-called supermarkets and their overwhelming monetary power.

This is a fascinating book and one that could be emulated with great advantage by the BSHP.

J. Burnby

https://doi.org/10.24355/dbbs.084-201802141340

Elephants' Milk

W. A. Jackson

Thomas Wakley's campaign against quack medicines is well known and was a prominent feature in the first year of publication of the *Lancet,*[1] but few people realise that, before this, in the early nineteenth century the editor of *The Monthly Gazette of Health,* Richard Reece MD (1775-1831), ridiculed many of the patent and proprietary medicines offered for sale to a gullible public. In 1817 among those that he attacked was a Mr Campbell, the proprietor of a nostrum known as 'Elephants' Milk'.[2]

In a booklet published by Mr. Campbell 'to guard youth against *ignorant pretenders and pretended Institutions*' he claimed that it was sold:

> Under the Caveat of Government, an effectual cure for debility, blindness, faded complexion, gray (sic) hairs, nightly disturbances, spasmodic complaints, certain diseases, bald head, noise in the ears, stiffness of joints, premature waste, watery eyes, &c. &c. &c. by P. Campbell, Senior Surgeon of the Royal College of London, late of Middlesex Hospital, Lecturer on Pneumatic Chemistry, a Seven Years Physician – Pupil to Dr. G. Pearson, &c. &c. &c.

Of course 'certain diseases' referred to venereal diseases, and one can only admire a man who could offer a medicine to cure these in addition to such a random collection of complaints, including blindness, baldness, and watery eyes. He had discovered that many of the distressing diseases that occurred in London were due to bad treatment, for which the *Pharmacopoeia of the London College of Physicians* was unable to offer any remedy.

Campbell claimed that his nostrum surpassed all other remedies, and was 'the very fountain of life'. Anybody who doubted his claims had only to look at the elephant, whose great strength accounted for its milk giving strength to the aged and infirm, whose long lifespan gave it the power to prolong the term of human life and whose mildness was responsible for its soothing powers.

To derive the full potential benefit it was necessary to drink a considerable quantity in order to complete the cure and regenerate the 'Constitution' as small amounts were only palliative. For patients who could not drink a sufficient quantity he had succeeded in concentrating the milk into a mass from which he had produced pills, a few of which were equivalent to 'a proper dose of the milk'. In addition, they could prove to be 'a great auxiliary to the milk in dreadful cases'. By doubly concentrating the pills these would cure a 'certain disease' (syphilis) in the same manner as mercury, making the gums sore and 'exciting something like salivation'. In this way the disease was cured without the pernicious effects of taking mercury, 'the consequences of which were more to be dreaded than the disease itself'.

Of course, elephants' milk is not the easiest of commodities to obtain, and to ensure a regular supply it was necessary for Mr. Campbell to risk his life and fortune by making two trips to the 'desert of Africa' to ensure a regular supply. That he should choose African rather than Indian elephants as a source of milk seems surprising, and one can quite believe that he found it uncommonly difficult to procure it. He explained that it proved necessary to resort to a stratagem. A group of five or more people went into a forest where elephants were common, taking with them a 'portable windlass, pulley, ropes, axe, saw, squibs, crackers, drums &c. &c.' They climbed the largest tree frequented by the elephants and fixed the windlass about twenty feet from the ground. Then they attached the pulley with a rope hanging down having 'a noose of a peculiar kind at its lower end, whereby they could grasp the body and neck of the female when she came to the spot'. Presumably this was a loop that lay on the ground and was large enough to encircle the elephant's body behind the front legs. When these preparations were complete the 'firemen' laid a semicircular line of squibs around the herd and set these off, at the same time beating drums, and thus drove the elephants to the spot where the trap was laid. According to Mr. Campbell the female advanced with her young one 'on her tusks', placed it against the largest tree and stood by to protect it. Some men then descended the tree, instantly adjusted the snare around the elephant's body and neck, and then her forefeet were raised from the ground by means of the windlass. Another rope was thrown round her trunk to prevent her using this to injure the milker. At this stage more men came down from the tree and drove off the remainder of the herd by beating a drum. She was then milked, said to be an arduous task, the men climbed back into the tree and the elephant was released and immediately ran after the herd, presumably taking her calf with her.

Not content with robbing female elephants of their milk, the bold Mr. Campbell devised a philosophical experiment to frighten a herd of 280 elephants that had come to drink at a body of water. Using a pneumatic trough, a retort, an Argand's lamp,[3] phosphorus and caustic alkali he covered the surface of the water with fire. Not surprisingly this startled the elephants and they turned round, 'consternated'[4] and then 'took to their heels, helter skelter', affording Mr Campbell great amusement as they ran into each other.[5]

Obviously a medicine obtained with so much difficulty and expense could not be sold for a few pence, and a bottle containing ten fluid ounces retailed for ten shillings (50p), an appreciable sum at the time. To safeguard the purchaser against fraudulent imitations each bottle was sealed with an impression of an elephant in the act of being milked on one side and the doctor's initials, P.C., on the other. Anybody who gave information against spurious compositions or base imitations would receive 'the highest usual rewards on conviction of the offenders'.

https://doi.org/10.24355/dbbs.084-201802141340

It seems bizarre that anybody could be so naive as to believe that elephants could be snared and milked in this way, or that elephants' milk could be so valuable therapeutically compared with that of asses, goats or cows. Furthermore the milk had to be transported from Africa and would surely have decomposed long before it reached London. However, people did buy the medicine. One of them was a carpenter who earned eighteen shillings (90p) per week. He took two bottles a week for three weeks, at a total cost of three pounds, before going to consult a surgeon, as, instead of being cured and being immune to further attacks as well as having his life prolonged, he found that his condition had deteriorated. In addition, he had found it necessary to pawn family property in order to pay for his supply of 'Elephants' Milk'. Mr Reece observed that if the only people to suffer such a financial loss were 'fantastic hypochondriacs' he should be inclined to 'let them enjoy the fruits of their own folly', but, sadly, the health of many who were so weak as to purchase such nostrums suffered a pernicious deterioration in their health. He regretted that an educated man should be guilty of such deception, but was happy to say that Mr Campbell was not a member of the 'college of London'.

What then was the composition of the 'Elephants' Milk'? A ten ounce bottle contained nine fluid ounces and two drachms of water to which had been added six drachms of a solution of gum mastic in spirits of wine to produce a suspension which resembled milk. He suggested that the cost to the proprietor would have been two pence (approximately 1p). In spite of Mr. Campbell's diatribe against the use of mercury in the treatment of syphilis the doubly concentrated pills that he supplied actually contained mercury - small wonder that they should make the gums sore and excite 'something like salivation'!

The next issue of *The Gazette* contained a copy of a letter addressed to the editor[6]:

> You are a most infamous fellow, and only shews (sic) your total ignorance of all medicine, by making such honourable mention of *my* Elephant's Milk in your *dastardly and ill-written pamphle* (sic). *Ly* (sic) *on ignoramus.* Each 10s. bote (sic) coste (sic) me 7s. 6d. [37.5p] each, not so good a profit as your's (sic), 11¾d. out of every shilling.
>
> *Marlbro' Street.* (Signed) A. Campbell'

There is no explanation of the fact that although the doctor's initials on the bottle seal were said to be 'P. C.' his letter was signed 'A. Campbell'. In reply Reece insisted that the analysis of the pretended milk was correct and defied him or any chemist to prove otherwise, and observed:

> 'If the article is not what the learned doctor represents it to be, viz. the milk of an elephant, the public will not hesitate to pronounce it an imposition'.

He thought that ass's milk would be a more appropriate name, and suggested with rather heavy humour that Campbell should replace the sign showing a man milking an elephant, that appeared in his window, with a ludicrous caricature of somebody milking a boar. Presumably the implication was that the idea of milking a male animal was no more ridiculous than that of milking an elephant. This seems to have closed the subject, and I have been unable to trace any reference to 'Elephant's Milk' elsewhere.

For many hundreds of years the reputation of a medicament was judged to a great extent by its rarity, high price or the difficulty of obtaining or preparing it. Examples of such drugs were unicorn's horn, bezoar stones, bone of a stag's heart, pearls and precious stones, eastern spices and polypharmaceutical preparations such as the theriacs. The promotion of 'Elephants' Milk' obviously was based on such ancient beliefs although virtually all the above were discredited as therapeutic agents before the end of the eighteenth century. We may find it surprising that members of the public could be duped into purchasing such items in the nineteenth century, but we must remember that remedies such as prepared goats' blood, dried mouse flesh and magical charms to cure tooth ache were still used, particularly in rural areas, throughout most of the century. Indeed, there are still people living who have carried a potato as a charm against rheumatism, buried a piece of steak in the garden after rubbing a wart with it, or treated a stye by rubbing it with a wedding ring. I suspect that many more years will pass before some of these time-honoured remedies are finally completely abandoned.

Endnotes and References

1. *The Lancet,* 2nd edition, Vol. 1. London: G. L. Hutchinson, 1824, pp. 30, 62-63, 89, 345.
2. Reece, R. (Ed). *The Monthly Gazette of Health,* Vol. 2 for the year 1817. London: Sold by Sherwood, Neely and Jones, 1818, pp. 523–527.
3. *Oxford English Dictionary.* Oxford University Press, 1999. '**argand** 1. Applied to a lamp invented by Aimé Argand about 1782, with a cylindrical wick, which allows a current of air to pass to both inner and outer surfaces of the flame, thus securing more perfect combustion and brighter light; also to a ring-shaped gas burner constructed on the same principle.' Presumably, Campbell was referring to the former type.
4. *Oxford English Dictionary.* Oxford University Press, 1999. '**consternate**, v. *trans.* To fill with amazement and terror, to dismay.'
5. Partington, J. R. *General and Inorganic Chemistry.* London: Macmillan, 1946, pp. 598–599. The apparatus described by Campbell could have been used in the laboratory to produce phosphine by heating the yellow phosphorus and sodium or potassium hydroxide in the retort. Normally the air in the apparatus would be replaced by coal gas to minimise the danger of an explosion, but this would not have been possible under the conditions described. As the gas was produced it was fed through a tube that dipped into the water contained in the pneumatic trough. When each bubble rose to the surface of the water it would ignite spontaneously with a bright flash, and produce a vortex-ring of white smoke. It is difficult to believe that an experiment on this scale would be spectacular enough to scare a herd of elephants, and the difficulties of performing it on a large scale would have been enormous.
6. Reece, R. Reference 2, pp. 553–554.

https://doi.org/10.24355/dbbs.084-201802141340

Review

The Pharmaceutical Industry: A guide to historical records

L. Richmond, J. Stevenson and A. Turton (Eds). Aldershot, Hants., GU11 3HR: Ashgate Ltd, 2003, pp.561. Foreword by P. Haggett. (No price given)

The British Archives Council was founded in 1934 to encourage the preservation of business archives. It also had for one of its objectives the promotion of business history, with the Council sponsoring a series of guides dealing with particular industries. Each book consists of a company-by-company guide to that industry, in this case the pharmaceutical industry.

It consists of a number of sections: an introduction to the industry before and up to about 1850 by Juanita Burnby of the BSHP; then one which covers the subsequent period since 1851; and thirdly an article on the archives of the industry, their scope and use, by Geoffrey Tweedale of the Manchester Metropolitan University.

This is followed by a Select Bibliography which does not include a fully comprehensive list of the *Pharmaceutical Historian* and the *Pharmaceutical Journal*, but does include a list of those who have gained PhDs, MPhils and MScs, which are not always easy to find. It also includes good lists for pharmaceutical legislation, periodicals, and trade and professional journals. It has also a 'User's Guide' which shows the arrangement of the book, as well as a select glossary of pharmaceutical terms which is of use for those who have little background in pharmacy. These are then followed by the bulk of the book which gives a comprehensive and extensive record of pharmaceutical businesses, and is indeed the main section of the book.

As the book had taken some seven years to prepare, it is unfortunately not entirely up-to-date (an almost impossible task, given the rate that mergers and takeovers are occurring these days), as, for example, the all-important SmithKlineBeecham merger with GlaxoWellcome. The lists of trade organisations are also given, as well as schools of pharmacy, including some associations, although it has to be pointed out that BSHP is no longer at 36 York Place, Edinburgh.

There is an excellent list of indices, running from names to places and subjects to archive repositories, added to which are two appendices, one for England, Ulster, Scotland and Wales, as well as one to record offices or repositories.

The book however is not entirely free from errors. The 1933 Pharmacy and Poisons Act did not say that agricultural and horticultural poisons could be sold by 'any shopkeeper': it was the Pharmacy and Medicines Act of 1941, which was highly complex in its schedules. Although geographically speaking Messrs Boots and Genatosan are only some fourteen miles apart, Boots did not make Sanatogen (p. 50). It is true that the government outlawed restrictive trade practices (p. 25) but it was only in 2001 that medicines were finally included in the ban.

The apprenticeship for a London apprentice was eight years and not seven—an old error which is frequently made. (The only possibility of getting away with seven years was to pay a hefty fine: a few did.) 'Howards of Ilford' date their separation from William Allen to 1807, not 1797, even though they were not actually at Ilford at that time.

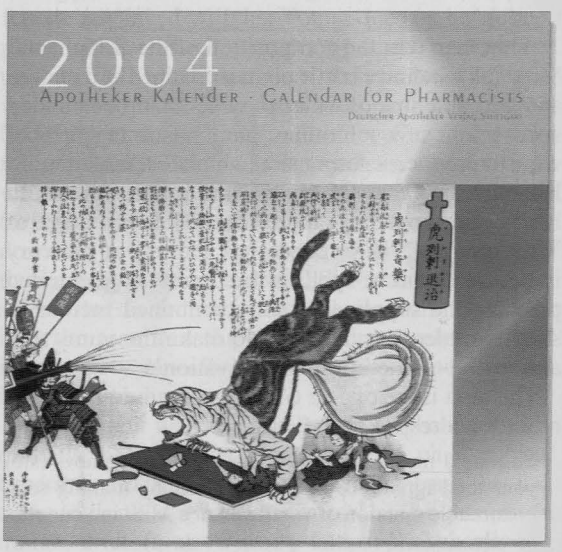
But nit-picking on one side, this is an excellent book and one to be highly recommended. It should at least be on *every* reference library bookshelf.

J. Burnby

Review

Apotheker-Kalender 2004 (Calendar for Pharmacists 2004)

Prof. Dr Wolfgang-Hagen Hein and Prof. Dr Werner Dressendörfer. ISBN: 3-7692-3410-3 (DAV). Obtainable from Deutscher Apotheker Verlag, Postfach 101061, 70009 Stuttgart, Germany or service@deutscher-apotheker-verlag.de; Price 48 Euros.



This excellent series of Calendars for Pharmacists was founded by Fritz Ferchl and on his death in 1953 taken over by the young Prof. Wolfgang-Hagen Hein, who died in April 2003 after preparing 51 editions. He is succeeded by Prof. Dressendörfer, who has assisted Prof. Hein in recent years.

The colour pages of the Calendar are 49 x 49 cm and illustrate objects from the Roche Collection in Basle and Grenzach-Wyhlen.

The cover (above) and May calendar show a Japanese leaflet dating from 1886 in which a chimaeric tiger/wild boar representing cholera is attacked by a blast from a bottle of carbolic acid, which promises more effect than the bottle of red plum vinegar on the right.

https://doi.org/10.24355/dbbs.084-201802141340

The picture for March is of a decorated bottle from the Orphanage Pharmacy at Halle, enamel painted with the label Aqu Rosarum. Two eagles soar towards the sun and represent the maxim of the institution from Isaiah 40:30 'Those who hope in the Lord will renew their strength, they will soar on wings like eagles.' Nowadays rose extract is requested in German pharmacies only at Christmas for the making of marzipan. The picture for November shows a similar flat-sided enamel-painted bottle from the portable pharmacy of August the Strong, elector of Saxony and King of Poland, richly decorated with the arms of the Saxon-Polish Alliance and dated 1791. The label is 'Ess C Aurant', or essence of bitter-orange peel, which was used as a gastric stimulant and appetiser.

Three months are illustrated by apothecary jars. December shows a 31-cm pear-shaped jar originating in the workshop of Diomede Durante in Rome at the end of the 16th century. With two handles, its front face is decorated with polychrome angel, puttoes, birds and vines and an empty label plate. The back has a monochrome design with blue oak leaves. For June there is an almost cylindrical albarello from Siena, dating from about 1510. The colourful design of peacock feathers, vines and floral themes has no label and a paper label would have been used. April shows two lidded white jars, one with a polychrome figure of St Peter and the other with St Paul; the jars originate from the Pfau workshop at Winterthur and are based on illustrations published in Augsburg in 1623.

The Thomas Rowlandson aquatint caricature of 'The Doctor dismissing Death' with an enema syringe is the subject for October, while July has prints of hollyhocks and a tree mallow from the Ricci Florilegium dating from the end of the 18th century. A 1920 watercolour of women working on manual medicine packaging lines at Hoffmann-LaRoche is the subject for February.

A well preserved medicine chest or portable pharmacy dating from the second half of the 18th century is shown for January. Red paper seals are partly intact, as are the labels, and the 16-cm high hinged and padded cabinet also contains a mortar and scales. A 20-cm two-handled brass mortar and pestle from the former imperial Hof-Apotheke in Vienna, decorated with a crowned two-headed eagle and dating from the 18th century is the subject for August. Lastly, September is represented by an 18th-century 'Nuremberg'-type microscope with a cardboard tube coated with shagreen and a wooden tripod stand.

The layout of the dates has been improved. The descriptions of the objects in English and German give us another fascinating glimpse into the history of pharmacy and the richness of European collections.

A.W.

Justus Liebig's 200th Birthday on the Internet

Dr Christiane Staiger

Two hundred years ago, one of the most famous scientists, Justus von Liebig, was born. To celebrate his birthday, many institutions in Germany offered lectures, exhibitions or presentations in 2003. Those of you who could not travel to Giessen or other places, might participate virtually with a mouse click, as several interesting websites are available on the internet on this special occasion.

Justus von Liebig was born in Darmstadt, Germany, on May 12, 1803. His father owned a drug and painting materials business. Justus found little satisfaction in the formal education available at the time, preferring to help his father in the family business and conducting experiments on his own. At the age of 15 he left school and started his career with an apprenticeship at the pharmacy of Heppenheim but abandoned it only 10 months later. Upon his return from Heppenheim, Liebig divided his time between experimentation and reading the court library of the reigning duke. The size of the Liebig family prevented his parents from substantial financial support for his education. Fortunately, grants from the Hessian government allowed Liebig to continue an academic career.

He entered the University of Bonn in 1820 where he studied with Karl Wilhelm Gottlob Kastner (1783-1857) . When Kastner moved to the University of Erlangen, Liebig accompanied him and received his doctorate there in 1822. Then he went to France to study abroad. In Paris, he worked with the eminent scientist Joseph Louis Gay-Lussac (1778-1850), who opened his eyes to the new idea for the need of accurate experiments to make sense of chemistry. Returning to Germany, Liebig became Professor of Chemistry at the University of Giessen in 1824 when he was only 21. Impressed by his experiences in France, Liebig established a large, modern chemistry laboratory that attracted numerous students. From his letters we know that Liebig was also impressed by the teaching methods used at the private institute for pharmacists run by Johann Bartholomäus Trommsdorff (1770-1837) in Erfurt, and experimental teaching became an important part of his work.

In 1829, Liebig completed an extensive study of the decomposition of various combinations by the use of chlorine. He and Friedrich Wöhler (1800-

https://doi.org/10.24355/dbbs.084-201802141340

1882) studied the composition of uric acid. Liebig was at the peak of his experimental productivity in the late 1830s. He dominated both organic chemistry and, after 1840, agricultural chemistry. He developed unique equipment to analyse inorganic and organic substances. Liebig discovered that plants feed on the nitrogen and carbon dioxide in the air, as well as on minerals in the soil. One of his most famous accomplishments was the invention of nitrogen-based fertiliser. Further important innovations were:

- The development of an improved method of elementary analysis (40 times faster than before)
- The development of the theory of radicals in collaboration with Friedrich Wöhler
- The foundation of agricultural chemistry (development of the theory of mineral nutrients)

Liebig was awarded the title of a 'Freiherr' in 1845. In 1852, he moved to Munich where he was a professor at the University until 1873.

Although he had not become a pharmacist, Liebig had close connections with pharmacy his entire life. He published in such pharmaceutical journals as the *Neues Journal der Pharmacie* and worked as the editor of several scientific journals, for example the *Magazin fur Pharmacie* or the *Annalen der Pharmacie*, which became later *Annalen der Chemie und Pharmacie* and were again renamed after Liebig's death as *Justus Liebig's Annalen der Chemie*.

Justus von Liebig died from pneumonia on 18 April, 1873 in Munich. His name was applied to the Giessen university after the second world war. In the rooms of his former institute a museum was opened in 1920.

Endnotes

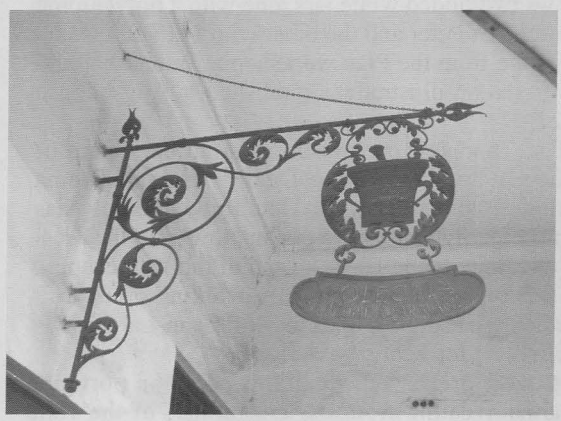
Justus von Liebig
http://www.sportsci.org/news/history/liebig/liebig.html
http://www.uh.edu/engines/epi1652.htm
http://www.wikipedia.org/wiki/Justus_von_Liebig
The Liebig-Museum in Gießen
http://www.liebig-museum.de/home1.html
Justus von Liebig: An Educational Paradox
http://www.woodrow.org/teachers/chemistry/institutes/1992/Liebig.html
Justus von Liebig and Friedrich Wöhler
http://www.chemheritage.org/EducationalServices/chemach/cssb/vlw.html
Justus von Liebig - Leading Teacher of Organic Chemistry
www.mayo.edu/proceedings/2001/sep/7609sv.pdf
Liebig-year 2003, celebrating Justus Liebig's 200th birthday
http://www.liebig-jahr.de/
Liebig's detailed CV (in German)
http://www.liebig-museum.de/justus.html
Recent publications:
Friedrich, Christoph. Justus von Liebig and pharmacy (in German). Pharm Ztg 2003; 148: 1634-1638, online at http://www.pharmazeutische-zeitung.de/pza/2003-18/titel.htm
Great chemist. Pharm J 2003; 270: 662, online at http://www.pharmj.com/Editorial/20030510/comment/onlooker.html

36th International Congress on the History of Pharmacy, Sinaia *(continued from p. 53)*

Delegates had the opportunity of a number of pre-conference tours including a two-day visit to the

Speakers at the discussion on teaching the history of pharmacy, including Peter Worling (representing BSHP) and Peter Homan (representing the Australian Academy of the History of Pharmacy) (*above*)

towns of Sibiu and Cluj-Napoca where there are Museums of Pharmacy with many unique artefacts, some dating back to the 16th century. Also on this



Sign outside the Cluj-Napoca Museum of Pharmacy, Transylvania, Romania. The Museum is part of the National Museum of Romania.

tour visits were made to Alba Iulia, the old capital of Transylvania, and Sighisoara, the birthplace of Vlad Tepes on whom the myth of Dracula was based. This is a preserved medieval town and World Heritage Site with the city walls and towers intact and the central streets lined with 16th-century houses. The trip gave delegates a wonderful opportunity to learn something of the history of Transylvania and see the countryside, before settling down to the conference. This was a unique opportunity for those living in the West to see at first hand the many problems that our colleagues are having to face in Romania.

Contributed by Peter M. Worling

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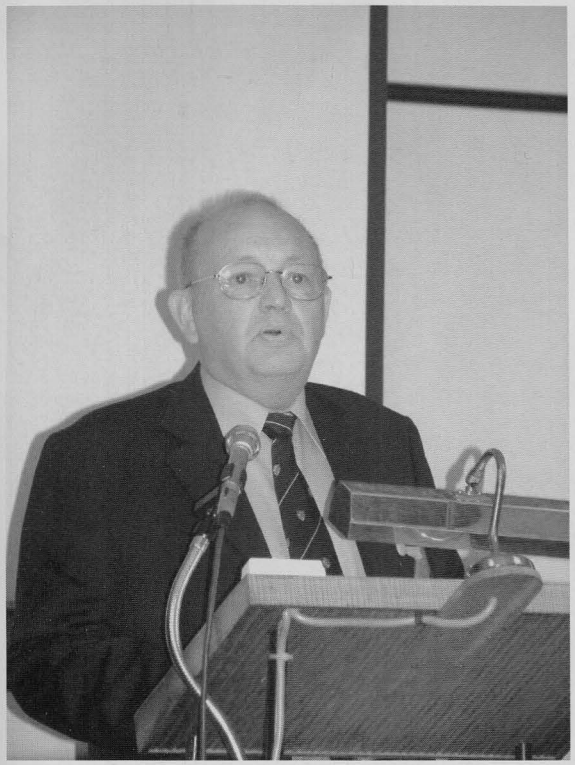

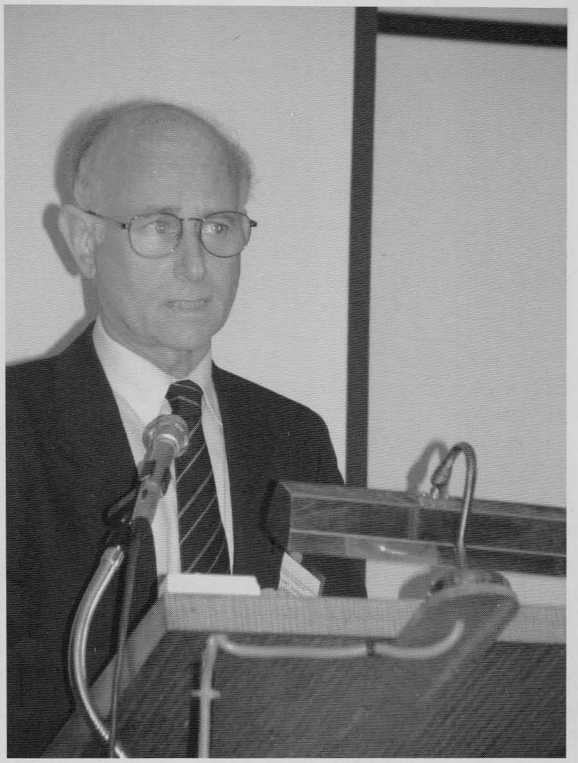

Peter Homan and Prof. Stuart Anderson speaking at the British Society for the History of Medicine Congress at Reading, September 2003, where they each presented a paper on the history of pharmacy.

The Pharmacy Museum at Sibiu, Romania.

Street in Sighisoara, Romania

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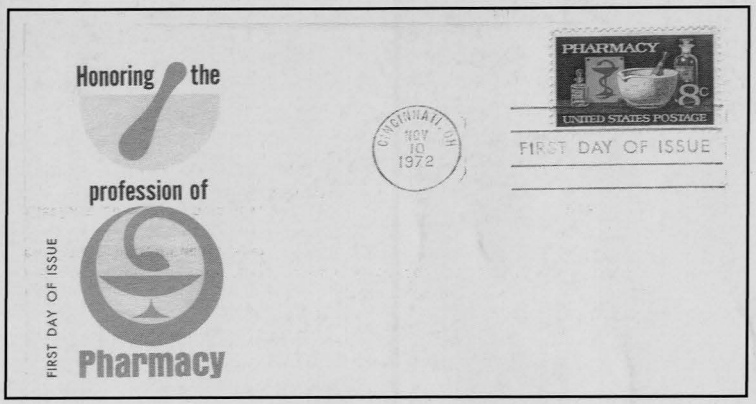

First day cover to honour the profession of pharmacy from USA 1972.

Postcards and greetings cards from the Museum

One of the range of 24 postcards and 4 greetings cards on sale on behalf of the Museum from the Library issue desk at 1 Lambeth High Street. All the cards show images or objects from the Museum's fine collections.
Reproduced with permission.

Right: '*Jacob Bell, founder of the Pharmaceutical Society in 1841 and first editor of the Pharmaceutical Journal*'. Sepia photograph by Barrauds of 263 Oxford Street.

 ISSN: 0079-1393

Typeset and Produced by Ralph Allen Press Ltd, Bath BA1 1UT
https://doi.org/10.24855/dbbs.084-20180214134